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ABSTRACT

This bibliography lists 1,196 articles dealing with the metric system. Entries are arranged alphabetically by author and include the title, publication information, and date of publication. A subject index is provided. (SB)

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BIBLIOGRAPHY

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FOREWORD

This listing of metric system literature sources is the result of the compilers' inability to find a comprehensive metric system bibliography while researching material for an article on the subject. It will be noted that some of the references give more complete source identification than others. This resulted because the data were obtained from a wide variety of sources (library files, reader indexes, collections maintained by organizations and individuals, footnoted items, etc.), which had been set up to fulfill requirements of the specific user. This bibliography is divided into two parts: the alphabetical listing which identifies each entry by number, and a subject index which codes each entry number to major subjects covered in that entry.

The authors wish to express their appreciation to all those who aided in the compilation of this bibliography. We are particularly indebted to Mr. Jon Seremak and Mr. Ted Cebula of the Hughes Aircraft Company Technical Document Center, who supplied reference material; to Mr. Fred Helgren, President, and Mr. Louis Sokol, Secretary, of the Metric Association, who permitted the use of the Association's and their own files; to Mrs. Marlene Post, Mrs. Jane Weston, and Miss Ruth Perl, who provided valuable editorial and typing assistance; and to Mr. Rick Hinkel, who handled cover design and artwork.

In the interest of future updating of this bibliography, readers are invited to submit appropriate reference material, directing it to the authors, in care of the Metric Association.

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PREFACE

". . . . Now the British are making the changeover (to metric), leaving us with the choice of accepting the worldwide language of measurement or of indulging in the luxury of a measurement system which will soon be peculiar to us alone . . . "

Lewis L. Strauss, former
Acting U. S. Secretary of Commerce

Of the two major systems of weights and measures used in the world today, the United States of America uses the oldest one, which is based upon the inch and the pound. The other system, presently used by over 90 percent of the world's population, is the metric system, with the meter and kilogram as its base.

The metric system originated nearly 200 years ago, primarily to keep the people of France from being cheated by traders. There were so many different types of measuring systems at that time that unscrupulous merchants bought long measure upcountry and sold short measure in towns, reaping huge profits, while swindling the farmers and artisans as well as the people who bought these workers' goods.

Value of the standardized metric measurements used by the French soon became so apparent to residents in adjoining countries, that these countries gradually adopted metric weights and measures. A steady progression of metric usage, in the majority of the world's countries, followed; and now the internationally-understood language of measurements based on the metric system is called the International System of Units, or SI.

Early in U. S. history, efforts were made to abandon the complicated inch-pound system in favor of the metric system. These efforts led to enactment of legislation by Congress, in 1866, that made the metric system the only legal system of weights and measures in the United States. The law, however, did not state that use of metric measurements is compulsory.

Since that time, consistent but unsuccessful attempts have been made to pass a law that makes the metric system the only legal system in the United States. In 1902, a bill for conversion to metric measurements in America seemed assured of passage; but, due to a crowded agenda, its sponsor sanctioned deferral of the vote until after Congress reconvened. This allowed enough opposition to build up to cause the sponsor's withdrawal of the bill from the Congressional hopper.

Starting in 1960, an almost-annual attempt has been made to get Congress to approve a comprehensive study on advantages and disadvantages of U. S. adoption of the SI. In general, these bills have met with positive results in the Senate, but have been held up by the Rules Committee in the House of Representatives.

Nevertheless, the Unites States has drifted toward metrics, and now uses a mixture of inch-pound/metric measurements, with the inch-pound system predominating. The SI has become the language of science in America. A number of groups (optical, pharmaceutical, chemical, etc.) have converted to the SI within their own industries. These groups report substantial advantages plus lowered costs from the changeover. Many Americans are not aware that they are using metric measurements when they order 35mm film, mention electrical volts, count calories, or state how many grams of vitamins they are taking.

In the meantime, the pro and con debates wax, but never wane. An endless stream of literature is generated, as evidenced in this bibliography that represents barely a fraction (i. e., a millimeter) of available metric data. Many notable scientists and engineers strongly advocate conversion to SI; and a number of foresighted Congressmen, with a genuine concern for the economic future of this nation, are continuing to work toward adoption of the much-simpler SI, which is perhaps the closest thing the world has to an international language.

Also promoting the use of the SI in American schools, commerce, and industry is the Metric Association, a national nonprofit organization. It publishes the quarterly, METRIC ASSOCIATION NEWSLETTER, with information on metric progress in the United States and throughout the world.

Metric System

BIBLIOGRAPHY

Entries are listed alphabetically by author, followed by title of document referenced, its publisher or the publication in which entry appeared, publication's volume number, page number(s) on which item appeared, and date of publication. Where author's name was not available, entry title is given first. A subject index (coded to entry numbers) is given at back of the book.

1. Actions of the 11th general conference on weights & measures: U.S. National Bureau of Standards, Washington, NBS Technical News Bulletin, vol. 44, 199, 1960.

2. An act to authorize the use of the metric system of weights and measures, authorized 28 July 1866. U. S. laws, statutes, etc., 39th Congress, Ch 301, 14, Stat 339, Little Brown & Co., 1868.

3. Adams, Huntington: Metric weights and measures. Mining and Scientific Press, vol. 123, 665-666, 12 November 1921.

4. Adams, John Quincy: Report upon weights and measures. Gales & Seaton, Washington, 241pp, 1821.

5. Adopting new pound, yard standards. Product Engineering, vol. 59, 16, 19 January 1959.

6. Adoption by the colleges of standard metric units. Journal of Industrial and Engineering Chemistry, vol. 13, 1068-1070, November 1921.

7. Adoption of the metric system. Science, vol. 149, 139, 9 July 1965.

8. Adoption of the metric system of weights and measures in India. Standards Engineering, vol. 9, 10+, August-September 1957.

9. Adoption of the metric system. Nature, vol. 99, 526-527, 30 August 1917; vol. 100, 467-468, 14 February 1918.

10. "Aef a liter, luv; Britain to convert to metric system. Time, vol. 85, 24-25, 4 June 1965.

11. Aeronautical weight engineers endorse metric system. Materials Research & Standards, vol. 6, 484, September 1966.

12. Aerospace Industries Association: Memorandum S. L. 65-40, Senate hearing on the metric system, 19 July 1965.

13. Agencies back metric study. Chemical & Engineering News, vol. 42, 26, 20 January 1964.

14. Agnew, P. G.: Renewal consideration of metric system for America suggested. Refrigeration Engineer, vol. 50, 1374, August 1945.

15. AGU Special Committee for the study of the metric system in the U.S.: Metric study report. American Geophysical Union, Washington, Transactions, September 1959.

16. Aid to using the metric system. School Science & Mathematics, p. 98, February 1959.

17. Akstens, F. W.: Some problems fastener industry perceives in effecting aerospace conversion to metric system. SAE Paper 660305, 4pp, 25-28 April 1966.

18. All ASTM publications will show metric equivalents. Magazine of Standards, vol. 34, 191, June 1963.

19. All-American Standards Council: Metric advance; population of countries which have gone onto the metric basis in merchandising. The Council, San Francisco, 4pp, 1925.

20. Allcock, Harry: Decimal coinage and metric dimensions. Industry Illustrated, London, November 1944.

21. Allcock, Harry: Metric system and international trade. Nature, vol. 106, 169-170, 7 October 1920.

22. Allcock, Harry: Metric system and decimal coinage. Nature, vol. 101, 274-277, 6 June 1918.

23. Allen, Arthur H.: Engineering pros and cons of the metric system. Society of Engineers (London) Transaction, 125-156, 1908.

24. Allen, J. W.: Revision of: the metric system, legislative proposals and arguments pro and con, originally written by E. W. Woodall. Economics Div., Legislative Reference Service., Library of Congress, Washington, 15 January 1964.

25. Allen W. H. and H. R. Dursch: Conversion. Science, vol. 132, 843-849, 23 September 1960.

26. American Institute of Weights and Measures: Our American system of weights and measures; why we should keep it. The Institute, N. Y., 64pp, 1924.

27. Ammetrics. Gas, vol. 40, 101+, November 1964.

28. Ampere turns per yard and megalines per acre. Electronics & Communications, vol. 10, 78, September 1962.

29. Anderton, P.: Changing to the metric system, conversion factors, symbols and definitions. Ministry of Technology, Great Britain, H.M. Stationery Office, London, 46pp, 1966.

30. Andrews, W.: DOD may use metric system for maverick, air force's air-to-ground missile program. Technology Week, vol. 21, 14-15, 3 July 1965.

31. Anguish of metric metabolism. Gas, vol. 40, 119+, October 1964.

32. Arad, A.: The metric debate. Product Engineering, vol. 78, 78-80, 14 May 1962.

33. Archer, F.W.: Marketing's role in the change to the metric system. Journal of Marketing, 10-14, October 1966.

34. Are we losing by inches, pro and con. Senior Scholastic (Teachers edition), vol. 77, 12, 14 December 1960.

35. Army adopts the metric system for weapons, related items. Machine Design, p. 5, 22 August 1957.

36. Army planning to use metric system by 1966. New York Times, p. 27, col. 2, 9 April 1961.

37. Army Regulation No. 700-75: Use of metric units of measurement in U.S. Army Weapons, 3 October 1962.

38. Army's going over to metric system in firing weapons. National Guard, vol. 2, 20 July 1957.

39. Arnold, C.J.: Let's eliminate fractions. Minnesota Journal of Education., 288-289, 26 March 1946.

40. Aronson, M.H., editor: Weight measurement and control. Rimbach Publishing, Pittsburgh, Pa., 1961.

41. Arps, J.J.: Are we losing by inches? metric vs. English units of measure. Petroleum Engineer, vol. 33, 1144, June 1961.

42. ASHRAE psychrometric chart converted to metric system. ASHRAE (American Societ, of Heating, Refrigerating & Air-Conditioning Engineers) Journal, vol 8, 68-69, April 1966.

43. Asimov, I: It's about time for a metric calendar - excerpt from fantasy and science fiction. Science Digest, vol. 45, 53-38, October 1960.

44. Asimov, Isaac: Mathemetics, prefixing it up. From the book: Adding a dimension, seventeen essays on the history of science, Doubleday, 1964.

45. Askins, C.: U.S. slow turning to metric system change. Army Times, 25 May 1967.

46. ASME takes stand on metric system change. Gas, vol. 41, 164, March 1965.

47. Astin, A. V.: New concepts in basic standards. Magazine of Standards, vol. 37, 111, April 1966.

48. Astin, A. V.: Weights and measures; report on meeting of the international committee of weights and measures. Science, vol. 143, 974-976, 28 February 1964.

49. ASTM metric practice guide. American Society for Testing & Materials, Philadelphia, Pa., 1st edition - 12pp, January 1964. 2nd edition - 46pp, December 1966. 3rd edition - 46pp, 10 March 1967.

50. ASTM recognizes metric system to increase American exports. American Society for Testing and Materials, Philadelphia, Pa., 5pp, January 1963.

51. ASTM recognizes the metric system. Machine Design, vol. 35, p. 10, 14 March 1963.

52. ASTM stand on metric system. Materials Research & Standards, vol. 2, 854, October 1962.

53. ASTM stand on the metric system. Materials Research & Standards, vol. 3, 45-46, January 1963.

54. Atkinson, Llewelyn B.: Pros and cons of the metric system. Institution of Electrical Engineers Journal, vol. 56, 121-128, February 1918.

55. An automotive viewpoint on measurement system. American Assn. for the Advancement of Science, Section M (Engineering), Washington, 30 December 1958.

56. Baehr, H. D.: Das internationale einheitensystem in der Waerme- und Kaeltetchnik. Allgemeine Waermetechnik, vol. 10, no. 1, 1-14, January 1961.

57. Baird, K. M.: L. E. Howlett: The international length standard. Applied Optitcs, vol. 2, 455-462, May 1963.

58. Baker, J. B.: How to adapt metric system. Iron Age, vol. 190, 121-123, 30 August 1962.

59. Baker, J. B.: How to adapt the metric system. Management Review, vol. 51, 56-58, December 1962.

60. Ballard, Stanley S.: Optical activities in the universities. Applied Optics, vol. 5, 1256, August 1966.

61. Banninger, E.: Adoption of the metric system in the United States. Proceedings of the Institution of Radio Engineers, vol. 48, 1343-44, 4 July 1960.

62. Barnard, Frederick A. P.: Metric system. Columbia College, N. Y., 194pp, 1872.

63. Barrell, H.: Metric system, an agonizing reappraisal. Engineering, vol. 190, 582-583, 28 October 1960.

64. Barrow, B. B.: IEEE takes a stand on units. IEEE Spectrum, vol. 3, 164-168, March 1966.

65. Barry, B. A.: Engineering measurements. John Wiley & Sons, N. Y., 1964.

66. Bassot, M.: Historical sketch of the foundation of the metric system. School of Mines Quarterly, vol. 23, 1-24, November 1901.

67. Bates, C. L.: British, American and metric. Product Engineering, vol. 19, 153-154, September 1948.

68. Bates, C. L.: Why not a decimal system? Aero Digest, vol. 54, 32, May 1947.

69. Baumeister, T.: Energy systems engineering and the metric system. Power, vol. 104, 72-73, July 1960.

70. Bearce, H. W.: Relation between inches and millimeters. American Machinist, vol. 59, 764, 22 November 1923. Discussion: American Machinist, vol. 60, 145-146, 24 January 1924.

71. Beaumont, A. B.: Metric system in agriculture. Science, vol. 59, 357-358, 18 April 1924.

72. Beebe, John S.: Inch-millimeter conflict stirs Boston section. Standards Engineering, vol. 16, 6, December 1964.

73. Beeth, G.: To adopt metric system. New York Times, p. 26, col. 7, 5 April 1957.

74. Belford, R.: Everybody happy after international organization for standards meeting (outlook is gradual marriage of metric and inch screw thread standards). Steel, vol. 156, 28, 8 March 1965.

75. Belitos, P. G.: The challenge of the decimal inch. The Magazine of Standards, vol. 32, 100-105, April 1961.

76. Bell, Alexander Graham: Our heterogeneous system of weights and measures. National Geographic, vol. 17, 158-169, March 1906.

77. Bell System Technical Journal Editorial Committee: BSTJ recommendation for adopting the international system (SI) of units. The Bell System Technical Journal, vol. 45, 765-766, July-August 1966.

78. Bellamy, J. C.: Proposed aerodetic units of length. Journal of Applied Meteorology, vol. 2, 798-803, December 1963.

79. Bendick, Jeanne: How much and how many. McGraw-Hill Book Co., N. Y., 188pp, 1947.

80. Benefits and problems cited in conversion of metric system. Industrial Research, 95-107, January 1967.

81. Benner, P. B.: Impact of the metric system on SAE Standards. SAE 21st Annual Meeting; Standards & Metrology, American Ordnance Assn., 6 April 1966.

82. Bennett, W. Burr: High cost of metric measurements. American Machinist, vol. 53, 1017, 25 November 1920.

83. Berland, T.: We're fighting a hot measurement war. Popular Mechanics, vol. 118, 106-111, December 1962.

84. Berriman, A.E.: Historical metrology. Lawrence Verry Inc., Mystic, Conn., 1964.

85. Beware of the metric system movement. Engineering and Mining Journal, vol. 101, 700, 15 April 1916.

86. Bielitz: A cheer for the metric system. Metal Progress, vol. 88, 13, July 1965.

87. Bierman, H.: Let's not put our best foot forward. Electronic Design, p. 29, 22 November 1965.

88. Big change to metric. Science News Letter, vol. 89, 74-75, 29 January 1966.

89. Bigg, P.H.: Accuracy of British kilogramme standards of mass. British Journal of Applied Physics, vol. 14, 591-592, September 1963.

90. Bigg, P.H.: International system of units (SI units). Britich Journal of Applied Physics, vol. 15. 1243-1246, October 1946.

91. Bigg, P.H.: The international system of units (SI units). National Physical Laboratory, Standards Div., Teddington, Middlesex, England, British Journal of Applied Physics, vol. 15, 1243-1246, June 1964.

92. Bigg, P.H., et al: Redetermination of values of imperial standard pound and of its parliamentary copies on terms of international kilogramme during years 1960 and 1961. British Journal of Applied Physics, vol. 13, no. 9, 456-61, September 1962.

93. Bigg, P.H.; P. Anderson: United Kingdom standards of yard in terms of metre. British Journal of Applied Physics, vol. 15, 291-300, March 1964.

94. Billingham, G.H.: Metric post-war aid? Education, vol. 69, 383-385, February 1949.

95. Bill to study feasibility of converting to the metric system moves ahead. Chemical & Engineering News, p. 19, 6 September 1965.

96. Bingham, Eugene C.: Are scientists encouraging popular ignorance? Science, vol. 55, 664-667, 23 June 1922.

97. Bingham, Eugene C.: Progress in metric standardization. Science, vol. 55, 232-233, 3 March 1922.

98. Bingham, Eugene C.: Progress in metric standardization. Journal of Industrial & Engineering Chemistry, vol. 14, 332-334, April 1922.

99. Bingham, Eugene C.: Selling the metric system--the next step. Chemicals, vol. 24, 10-11, 31 August 1925.

100. Bingham, W.V.: Conference on world metric standardization. Science, vol. 56, 362-363, 29 September 1922.

101. Binney, H.A.R.: Discussion of J.D. Hamilton's article on going metric. Engineer, vol. 221, 428, 18 March 1966.

102. Binney, H.A.R.: The role of BSI in conversion to the metric system, and progress to date. Paper presented at Standards Assn. Section, BSI conference on the change to the metric system in the UK, and its relation to international standards, British Standards Institution, London, 3pp, 14-15, April 1966.

103. Binney, H.A.R.: Standards in the United Kingdom, export and import. Standards Engineering, vol. 18, 1, 9 & 10, January 1966.

104. Black, A.: Why the metric system? Aero Digest, vol. 54, 151, January 1947. Reply: Why not a decimal system? C. L. Bates, vol. 54, 32, May 1947.

105. Black, D.B.: Metric system conversion faces custom as big hurdle; abstract. Oil, Paint & Drug Reporter, vol. 171, 5, 4 February 1957. Also: Chemical & Engineering News, vol.35, 38, 11 February 1957.

106. Bond-Williams, N.I.: International standards cost and design - competitive ability. British Standards Institution, London, BSI News, 8-11, October 1966.

107. Bowles: Metric system in grade 6. Arithmetic Teacher, vol.11, 36-38, January 1964.

108. Bowman, M.E.: Romance in arithmetic--a history of our currency, weights and measures, and calendar. 160pp, 1950.

109. Brady, T.F.: 10 lakh in India is 1,000,000, and that's a tenth of a core. New York Times, p.2, col. 5, 1 June 1960.

110. Branley, F.M.: Metric system. Grade Teacher, vol. 77, 49, December 1959.

111. Brecher, R.; E. Brecher: How to avoid being cheated by the pound or gallon. Readers Digest, vol. 77, 81-84, October 1960.

112. Briggs, C.A.: Metric system. Scientific American Supplement, vol. 84, 149-50, 8 September 1917.

113. Britain pushes work on metric conversion. Los Angeles Times, 24 October 1966.

114. Britain switching to metric system. Los Angeles Times, 24 May 1965.

115. British adopt metrics--will we follow? Engineering Graphics, p. 19, August 1965.

116. British Board of Trade: Report of the committee on weights and measures legislation. 1958.

117. British industry asks for adoption of metric system. Chemical & Engineering News, vol. 43, 27, 15 March 1965.

118. British parliamentary commission makes a final and decisive report against the metric system. Iron Age, vol. 101, 1327, 23 May 1918. Same article: (1) American Machinist, vol. 40, 92a, 11 July 1918, and (2) Industrial Management, vol. 56, 152-153, August 1918.

119. British scientific societies' committee reports against compulsory metrics. American Machinist, vol. 54, 40a, 6 January 1921.

120. British weights and measures and the metric system. Edinburgh Review, vol. 212, 426-429, October 1910.

121. Brook, J.: Metric system and British equivalents. Barnes & Noble, N.Y., rev. ed., 1955.

122. Brooks, Frederick: Pan-American use of the metric system. Boston Society of Civil Engineers Journal, vol. 3, 65-69, February 1916. Discussion: vol. 3, 377-403, September 1916.

123. Brown, C.O.: Changeover from English to metric units. Industrial & Engineering Chemistry, vol. 42, supplement 55A-56A, June 1950.

124. Brzezinski, Charles J.: The metric system and the Dept. of Defense. Paper presented at SAE International Congress & Exposition of Automotive Engineering, 1961.

125. BSI - focal point for the metric change. British Standards Institution, London, 3pp, 1965.

126. BSI, the change to the metric system in the United Kingdom, and its relation to international standards. Proceedings of conference held in London, British Standards Institution, London, 84pp, 14-15 April 1966.

127. BSI standards conference 'metric tide running strongly.' BSI News, British Standards Institution, London, June 1966.

128. BSTJ recommendation for adopting the international system (SI) of units. The Bell System Technical Journal, vol. 45, 765-766, July-August 1966.

129. Buchsbaum, A.: English and metric systems can co-exist peacefully. American Society of Naval Engineers Journal, vol. 72, 291-294, May 1960. Discussion: vol. 72, 783-784, November 1960.

130. Builders go metric. Engineering (British), vol. 203, 328-329, 3 March 1967.

131. Bulletin on proper metric usage within NASA, NASA SP-7012, National Aeronautics & Space Administration, Government Printing Office, Washington.

132. Bullock, M.L.: Systems of units in mechanics, summary. American Journal of Physics, vol. 222, 291-299, May 1954. Also, Engineer, 30 November 1951.

133. Bullock, W.E.: The metric system--not for my money. The Houghton Line, 26-29, September 1961.

134. Bullock, W.E.: Why the metric system didn't work as a system. Education, vol. 71, 528-530, April 1951.

135. Burlingame, Luther D.: Latin-American situation regarding weights and measures. Mechanical Engineering, vol. 43, 277-278, April 1921.

136. Burlingame, Luther D.: Metric agitation. Machinery, vol. 22, 964-969, July 1916.

137. Busch, T.: Fundamentals of dimensional metrology. Delmar Publishing Co., 1964.

138. Busch, T.: Interchangeability chart shows correlation between inch/metric standard sizes. Tooling & Production, vol. 32, 150-151, June 1966.

139. Busch, T.: Mess in measurement; abstract. Automation, vol. 12, 147-148, October 1965.

140. Business and the metric system. Iron Trade Review, vol. 62, 161, 10 January 1918.

141. Businessmen who want the metric system. Science, vol. 44, 59, 14 July 1916.

142. Bussey, W.S.; Jensen, M.W.: Weights and measures administration in the United States. The Monthly Review, The Institute of Weights & Measures Administration, Surrey, England, April 1956.

143. Butcher, F.E.: Going metric - Britain's first steps. Materials Research & Standards, vol. 7, 357-360, August 1967.

144. Butcher, F.E.: Going metric, Britain's first year. Magazine of Standards, vol. 38, 50-53, February, 1967.

145. Cabot, Godfrey, L.: Metric system should be adopted for aeronautic purposes. Flying, vol. 6, 862, November 1917.

146. Cameron, A. Guyot: Meaning of the metric move for business and nation. Forbes, vol. 13, 450-451, 19 January; 578-580, 16 February; 696-698, 15 March 1924.

147. Carmichael, Colin: Will we stand alone? Machine, 24 June 1965.

148. Case for the English system of weights and measures. World's Work, vol. 39, 227-228, January 1920.

149. Cattaneo, A.: The battle of measurement systems and the cocktail series. Standards Engineering, vol. 15, 3-5, September, 1963.

150. Caution urged by NASA aide. Metalworking News, 28 September 1964.

151. Centimeters inch up. Science News, vol. 91, 87, 29 January 1967.

152. Chandra, S.S.: India's metric changeover. Standardization, British War Office, London, October 1962.

153. Changing to the metric system; conversion factors, symbols, definitions. National Physical Lab., London, 1965.

154. Changeover to metric? Space/Aeronautics (letters), 250-254, February 1959.

155. Changeover to the metric system? Space/Aeronautics, December 1958.

156. Change to decimal money in 1971. The Daily Telegraph, London, 2 March 1966.

157. Change to metric system. New Zealand Standards Bulletin, September 1965.

158. Change to metric system. British Standards Institution, London, PD 4555, May 1962.

159. Change to the metric system? British Standards Institution, London, Publication PD 4555, May 1962.

160. Change to the metric system? Engineer, vol. 212, 927, 25 May 1962.

161. The change to the metric system in the UK, and its relation to international standards. Proceedings of conference held at Imperial College of Science & Technology, England; British Standards Institution, London, 84pp, 14-15 April 1966.

162. The change to metric units. Nature, vol. 216, 1272-1274, 30 December 1967.

163. Cherishing antiquated tools. Literary Digest, vol. 85, 24, 13 June 1925.

164. Chicago area favors shift to metric system. Metalworking News, 25 February 1963.

165. Chilton, C. H.: Why the fuss over metric units? Chemical Engineering, p. 7, 26 April 1965.

166. Chisholm, L. J.: Units of weight and measure, international (metric) and U. S. customary (definitions and tables of equivalents). U. S. Dept. of Commerce, NBS Misc. Publication 286, Washington, 254pp, May 1967.

167. Churchman, C. W.: Measurement: definitions and theories. John Wiley & Sons, N. Y., 1959.

168. Chute, David W.: U. S. feeling pressure to use metric system. Los Angeles Times, 20 November 1966.

169. Clapham, Charles B.: Metric system for engineers. E. P. Dutton & Co., N. Y., 1922.

170. Clarke, Loyal: Metric system. Chemical & Engineering News, p. 8, 9 May 1966.

171. Clason, W. E.: Lexicon of international and national units. Elsevier Publishing Co., N. Y., 1964.

172. Collins, Joseph V.: Metrical tragedy. Scientific Monthly, vol. 1, 256-263, December 1915.

173. Collins, Joseph V.: Metric reform in the United States. Educational Review, vol. 52, 265-271, October 1961.

174. Collins, Joseph V.: Metric weights and measures. Education, vol. 15, 229-235, December 1894.

175. Colvin, F. H.: Shall we cling to the inch? American Machinist, vol. 91, 139, 13 March 1947.

176. Comment on efforts to standardize inch. New York Times, Sect. 4, p. 8, 5 October 1958.

177. Commerce backs metric system study. Chemical & Engineering News, vol. 43, 22, 19 July 1965.

178. Committee on technical standards, bureau of surveys and maps, recommends use of English measuring system. American Machinist, vol. 53, 647-648, 30 September 1920.

179. Common language needed. Electro-Technology, p. 11, June 1965.

180. Common sense on the metric system. Compressed Air Magazine, vol. 22, 8401-8403, June 1917.

181. Common systems of measurement. Standards Engineering, vol. 27, 121, May 1965.

182. Compound rest adjusts lathe tool to diameters dimensioned in metric system. Machinery, vol. 67, 132, June 1961.

183. Compromise reached on inch-metric NATO tank disputs. Assembly Engineering, p. 14, July 1965.

184. Comptes Tendus des seances de la Onziume conference generale des poids et mesures. Gautheir-Villars & Cie, Paris, available as NASA TTF-217, Washington, 1960.

185. Compulsory metric system. Mill Supplies, vol. 7, 31, March 1917.

186. A conformal and worldwide military grid system. ASCE Transactions, vol. 121, 633, Paper No. 2813, 1955.

187. Construction industry and metric dimensions. The Engineer (British), vol. 223, 350, 3 March 1967.

188. Conversion. Science, vol. 132, 256, 23 July 1960.

189. Conversion factors and tables. British Standards Institution, London, British Standard 350, Part I, 114pp, 1959; Part II, 1962.

190. Conversion factors (English to metric). Water & Sewage Works, vol. 113, R305-307, 30 November 1966.

191. Conversion of inch and metric sizes on engineering drawings. The Engineer (British), 25 March 1955. Also 1 April 1955.

192. Conversion of ordnance weapons to provide for use of the meter as the unit of linear measurement, U. S. Army Ordnance Corps Technical Introduction No. 300-4-61, 12 September 1961.

193. Conversions in English and metric systems. Products Engineering, vol. 28, A30—A31, mid-October 1957.

194. Conversion table for ten-thousandths to mm: reference book sheet. American Machinist, vol. 93, 135, 10 February 1949.

195. Conversion to metric system, hearing, 89th Congress, 1st session, on S. 774, 68pp, 14 July 1965.

196. Conversion to metric system, is it inevitable? Automation, vol. 13, 39, June 1966.

197. Conversion to the metric system. Stanford Research Institute, Menlo Park, Calif., SRI Journal, 14-15, January 1965.

198. Conversion to the metric system - where do we stand? The American Engineer, 29-34, October 1964.

199. Conversion to the metric system - where do we stand? Naval Engineers Journal, vol. 77, 431-436, June 1965.

200. Conway, H. G.: What future for metric threads? Engineering, vol. 201, 43-45, 7 January 1966; Discussion: p. 65, 14 January 1966.

201. Cordtz, Dan: Campaign to switch U. S. to metric system appears to inch ahead. Wall Street Journal, N. Y., 14 July 1965.

202. Cramer, R.: The metric system, boon or burden? Modern Machine Shop Magazine, 110-115, September 1966; 120-127, October 1966; 108-113, November 1966.

203. Crawley, A. E.: Metric systems. Discovery, vol. 2, 73-75, March 1921.

204. Crosby, R. W.: U. S. suggests study to measure impact of switch to metrics. Iron Age, vol. 196, 28-29, 22 July 1965.

205. Crosby, R. W.: Will the U. S. be left to fight for last inch (planned shift to metric system by British leaves U. S. almost alone). Iron Age, vol. 195, 26, 10 June 1965.

206. Cuba adopts metric weight system. Foreign Commerce Weekly, vol. 48, 3, 3 November 1952.

207. Cusset, F.: Complete conversion tables, American, English, and metric measures. Blondel La Rougery, Paris, 1959.

208. Cuttendon: Some problems in international standards. Scholastic Monthly, vol. 78, 278-282, May 1954

209. Dale, Samuel S.: Bureaucratic control of weights and measures. Textiles, vol. 16, 37, March 1920.

210. Dale, Samuel S.: Educating the public in weights and measures. Journal of Chemical Education, vol. 2, 1064-1067, November 1925.

211. Dale, Samuel S.: Englewood high school metric essay. Englewood (N. J.) Press, p. 3, 1 August 1925.

212. Dale, Samuel S.: English uniformity or metric confusion? Kiwanis Magazine, November 1925.

213. Dale, Samuel S.: Federal director of weights and measures. Author, Boston, 24pp, 1924.

214. Dale, Samuel S.: List of books, pamphlets, documents and other literature on weights and measures in author's personal collection. (Over 1100 items in different languages, dating from 1520 to 1925). Author, Boston, Mass.

215. Dale, Samuel S.: Metric system - statement at hearings on S.2267. Government Printing Office, Washington, 24pp, 1922.

216. Dale, Samuel S.: Our English weights and measures. Textiles, vol. 14, 23-25, January 1919.

217. Dale, Samuel S.: Scientists and the weights and measures question. Textiles, vol. 22, 12-13, January 1923.

218. Dale, Samuel S.: Shall the metric system be forced on the people? Scale Journal, vol. 4, 5-7, 10 March 1918.

219. Dale, Samuel S.: Standardization for Pan America. Paper read at the First Pan American Standardization Conference, Lima, Peru, 23 December 1925. American Institute of Weights & Measures Quarterly, January 1925.

220. Dale, Samuel S.: Talk on textile arithmetic. Textile World Record, vol. 35, 422-427, June 1908.

221. Dallas, D. B.: Millionths or microns - which measuring systems? Tool & Manufacturing Engineer, vol. 49, 75-78, October 1962.

222. Dansk Standardiseringsrad: General rules for the use of decimal multiples and submultiples of the SI units. 22 pp, January 1967.

223. Darmody, W. J.: Some observations on the use of metric units in manufacture and measurement. Standardization-Keystone of Industrial Progress, American Standards Assn. proceedings, 10th National Conference on Standards, 12-13, 1959.

224. Davies, Charles: Metric system: reports of a committee of the university convocation of the state of New York (includes 1821 report on metric system by John Quincy Adams and Sir John Herschel's lecture on standards of weights and measures). A.S. Barnes & Co., N.Y., 349pp, 1874.

225. Davis: Growth of preschool childrens' familiarity with measurement. Arithmetic Teacher, vol. 6, 186-190, October 1959.

226. Davis, J.W.: Congress and the metric system. Paper presented at annual meeting (in Philadelphia) of Metric Association, 12pp, 28 December 1962.

227. Davis, L.E.: Metric system III (letter). Electronics, p. 4, 9 August 1963.

228. Davis, R.K.; W. Schmid.: Should industry in America switch to the metric system? pro and con. Factory, vol. 123, 92-93, April 1965.

229. Davison, C.: Origin of foot-measure. Engineering, vol. 184, no. 4778, 418-421, 4 October 1957.

230. Deady William F.: Systematic handling of dyestuffs in practice and the practical application of the metric system. American Dyestuff Reporter, vol. 12, 322-325, 23 April 1923.

231. DeAngelis, C.: Basic units of metric system. Space-Aeronautics, vol. 33, 316, January 1960.

232. Debate on metric system, meter vs. inch. Steel, vol. 155, 96-97, 2 November 1964.

233. Debate renewed on metric system. New York Times, p. 82, col. 3&4, 25 October 1959.

234. Decimal angles and time - are they next? Product Engineering, vol. 37, 42-44, 5 December 1966.

235. Decimal coin system starts in 1971. The Daily Telegraph, London, 13 December 1966.

236. Decimal coinage and the metric system. Engineer, vol. 209, 787, 6 May 1960.

237. Decimal coinage and the metric system. Should Britain Change? A joint report of committees from the British Assn. for the Advancement of Science, and the Assn. of British Chambers of Commerce. Butterworths Scientific Publications, London, 1960.

238. Decimal-metric change in practice. Engineering, vol. 192, 840, 29 December 1961.

239. Decimal plan proposed for British pound. Los Angeles Times, 24 September 1963.

240. Decimals and metrics. The Engineer (British), vol. 223, 3-4, 6 January 1967.

241. Decision to go metric. London (England) Times, Education Supplement, vol. 2644, 161, 21 January 1966.

242. Deere uses two systems in drawings. Metalworking News, 28 September 1964.

243. Defense of the inch. Electro-Technology, p. 11, June 1965.

244. DelSolar, A. F.: Weights and measures for Pan American standards. Paper read at the first Pan American Standardization Conference, Lima, Peru. Samuel S. Dale, Boston, Mass., 2pp, 19 December 1925.

245. Demarest, H. S.: Danger of compulsory metric standards. American Machinist, vol. 54, 949-950, 2 June 1921.

246. DeMay, A. J.: Metric system explained. Instrumentation, vol. 54, 28, October 1954.

247. DeSola, R.: International conversion tables. Meredith Press, N. Y., 1961.

248. DeVore: Two ways to measure. Grade Teacher, vol. 74, 54, March 1967.

249. Discuss metric system. Science News Letter, vol. 77, 20, 9 January 1960.

250. DOD backs metric use study. Army Times, p. 19, col. 3-5, 5 February 1964.

251. Dodd, G. E.; G. J. Pearmain: How India tackled the metric change. BSI News, British Standards Institution, London, November 1965.

252. Dominicans ease rules on metric system use. Foreign Commerce Weekly, vol. 55, 7. 23 April 1956.

253. Doursther, Horace: Dictionnaire universal des poids et mesures, anciens et modernes, contenant des tables des monaires de tous les pays. Bruxelles, Hayez, 604pp, 1840 (out of print).

254. Drake, Fred R.: Metric system in foreign and domestic trade. National foreign trade convention, 4th official report. 244-249, 1917.

255. Drews, R. J.: Should the steel industry convert to the metric system? Standardization-Keystone of Industrial Progress, American Standards Assn. proceedings, 10th National Conference on Standards, 8-9, 1959.

256. Drews, Ralph M.; C. D. Leake: Metric system pro and con. Popular Mechanics, vol. 114, 138-139, December 1960.

257. Drury, Aubrey: Away with rule of thumb. All-American Standards Council, Rotarian, 1930.

258. Drury, Aubrey: Education and the metric advance. National Education Association Journal, vol. 13, 179-180, May 1924.

259. Drury, Aubrey: One standard for all America. Kiwanis Magazine, March 1925.

260. Drury, Aubrey: Standardization - lack of metric system handicap to United States in work of reconstruction and in entering field of foreign trade. Current Affairs, 4pp, 13 October 1919.

261. Drury, Aubrey: Standardization with metric units. Journal of Electricity, vol. 43, 409-411. 1 November 1919.

262. Drury, Aubrey: World metric standardization, an urgent issue. World Metric Standardization Council, San Francisco, 524pp, 1922.

263. Dual reading dials for machine tools. The Engineer (British) vol. 222, 391, 9 September 1966.

264. Dubois, J. P.: Metric survey results. Design News, 3 March and 31 March 1965.

265. Dubois, J. P.: Public aspects of the metric system promotion, exorcizing a myth. Paper presented at annual meeting (in Philadelphia) of Metric Association, 28 December 1962.

266. Dubois, J.: Stand up and be counted. Design News, 20 January 1966.

267. Dupuis, N. F.: Metric system. Queen's Quarterly, vol. 14, 163-172, January 1907.

268. Dushane, B.: Weights and measures, arguments for and against adoption of metric system. Science, vol. 136, 1085, 29 June 1962. Reply by J. Mayer, Science, vol. 137, 1021, 28 September 1962.

269. Dursch, Robert H.: Conversions. Science, vol. 132, 848, 23 September 1960.

270. Ebon, J.F.: Measurement, but not necessarily gas. Gas, vol. 35, 56-57, August 1959.

271. Economic phase of the metric system; is this a strong anti-metric argument? Valve World, vol. 14, 100-101, 239-241 March 1917.

272. Eden, J.J.: Standard nominal diameters for metric and inch units. Engineering, vol. 173, 244-246, 22 February 1952.

273. Ehrensperger, C.: World economy and the decimal metric units, a European view. Magazine of Standards, vol. 33, 146-148, May 1962.

274. Elliott, Louis: Engineers should take an interest in the metric system. The American Engineer, June 1944.

275. End of the meter bars? Time, vol. 62, 43, 28 September 1953.

276. Engel, R.W.: Metric conversion: petition to congress resolution by the American Institute of Nutrition. Science, vol. 148, 1670, 25 June 1965.

277. Engineers discuss the change to metric. Product Engineering, vol. 33, 72-75, 23 July 1962.

278. England takes measure from the metric system. Electronics, vol. 37, 18, 14 February 1964.

279. Englehard, E.: Proceedings, symposium on interferometry at the National Physical Laboratory, p. 34, June 1959.

280. English/metric conversion. The Engineer (British) vol. 223, 81, 13 January 1967.

281. English/metric conversion rule. Engineering, vol. 224, 198, 11 August 1967.

282. English/metric dials on machine tools. The Engineer (British) vol. 222, 883, 9 December 1966.

283. English/metric quotes. Standards Engineering, vol. 12, 20, August/September 1960. Also vol. 12, 15-17, October/November 1960.

284. English/metric study urged. Industrial Research, p. 26, March 1967.

285. Equivalent metric values in scientific papers. Engineering, vol. 165, 115, 30 January 1948.

286. Ernsberger, R.W.: The metric system at Eli Lilly and Company. Standardization-Keystone of Industrial Progress, American Standards Assn. proceedings, 10th National Conference on Standards, 4-5, 1959.

287. Experience with the metric system. American Machinist, vol. 52, 1063, 13 May 1920.

288. Extent to which the metric system is used in Latin America. American Society of Mechanical Engineers Journal, vol. 41, 38-41, January 1919.

289. Falls, C. W.: Further progress reported in international motor standards. Electrical Manufacturing, April 1957.

290. Fastener Assn. backs the inch. Plastics Design & Processing, p. 4, 26 April 1965.

291. Fastener makers debate inch vs metric systems. Steel, vol. 155, 44-45, 27 July 1964.

292. Fasteners group takes stand in inch vs. metric issue. Automation, 36-40, September 1964.

293. Fasteners and metric debate. Standards Engineering, vol. 16, 1&6, December 1964.

294. Fastener specifications and standards. Fastener Standards, 4th edition, compiled by Industrial Fasteners Institute, 318-321, 1965.

295. Federal Aviation Agency (FAA): U.S. adoption of the metric system of weights and measures (FAA draft staff study). Washington, 11pp, 1966.

296. Fenger, F. H.: Metric system now. Civil Engineering (ASCE) vol. 35, 49, December 1965.

297. Fetters, C. R.: Placing metric system in the curriculum. Ohio Scholastic, vol. 23, 412-413, December 1945.

298. 54 percent of independent business group against switch to metric system. Air Conditioning, Heating & Refrigeration News, vol. 106, 24, 15 November 1965.

299. Finney, J. W.: Six countries agree on inch and pounds. New York Times, p. 1, col. 5, 1 January 1959.

300. Fischer, Louis A.: History of standard weights and measures in the United States. U.S. National Bureau of Standards, Washington, Misc. Publication No. M64.

301. Fischer, Louis A.: History of the standard weights and measures of the United States. Scientific American Supplement, vol. 61, 25310-11, 25334-6, 14 and 21 April 1906.

302. Fisher, Martin H., M. D.: Hemispheric solidarity. Cincinnati Journal of Medicine, vol. 24, 94, 1943.

303. Flegler, E.: Einheiten und einheitensysteme. VDI Zeit, vol. 100, no. 23, 1100-11-2, Scientific Council of VDI, Germany, 11 August 1958.

304. Ford and the metric system. Steel, p. 117, 10 October 1966.

305. Ford continues metric studies. Quality Assurance, p. 9, September 1967.

306. Ford details metric usage. Steel, p. 35, 8 May 1967.

307. Forssell, Carl: An inch-pint-pound decimal system. Standards Engineering, vol. 17, 7-9, December 1966.

308. For the U.S. conversion to the metric system. National Scalemen's Assn., 48th Annual Convention, Chicago, 12pp, 13 April 1967.

309. Foss, W.O.: The choice: chaos or metric. Commerce, 23-24, February 1962.

310. Foss, William O.: The choice: chaos or metric? Koppers Company, 13-14, July 1962.

311. Frank J.: Metric vs. inch--dollar dilemma. Mill & Factory, vol. 77, 52-54, October 1965.

312. Frank J.: Should we go metric? Supervisory Management, vol. 11, 52-53, February 1966.

313. Freedom to measure yards or metres? Engineering (British) vol. 171, 744-746, 22 June 1951.

314. French conference adopts metric standard. Electronics, vol. 33, 12, 2 November 1960.

315. Friedlander, Dan: Chicago gagemaker sees room for both. Metalworking News, 28 September 1964.

316. Friesth, E.R.: Dual dimensioning. Journal of Industrial Arts Education, vol. 25, 48-50, March 1966.

317. From John Quincy Adams to Madison avenue. USA Consumer Report, vol. 24, 434-437, August 1959.

318. From monarch's nose to metrics. Engineering Graphics, vol. 14, 5, November 1967.

319. Frost, D.V.: Convert to metric! Chemicals & Engineering News, p. 4, 21 October 1963.

320. Frost, Doublas V.: From finger counting to the metric system. Applied Optics, vol. 5, 1257-1258, August 1966.

321. Frost, D.V.: Logical steps to metric conversion. Paper presented at annual meeting of Metric Association, 18pp, 28 December 1963.

322. Frost, D.V.: Metric question. Science, vol. 142, 1124-1125, 29 November 1963.

323. Frost, D.V.: The U.S. should adopt a whole new system of measurement. Nation's Business, vol. 54, 86+, January 1966.

324. Frost, D.V.; J.A. MacLean Jr.: Why inches and ounces now are fighting words: pro and con. Nation's Business, vol. 54, 86-89, January 1966.

325. Frost, M.J.: Decimal angle and time measurement. Products Engineering, p. 42, 5 December 1966.

326. Fundamental quantities and units of the MKSA system and quantities and units of space and time (ISO Recommendation R 31/Part I). International Organization for Standardization, Geneva, Switzerland (available from U.S.A. Standards Institute), 1966.

327. Fundamental standards of length and mass. U.S. Coast & Geodetic Survey, Bulletin No. 26, U.S. Government Printing Office, Washington, 1893.

328. Further progress reported in international motor standards. Electrical Manufacturing, vol. 59, 144-147, April 1957.

329. Gagne, A.F.: Yes, but can you justify it? Standards Engineering, vol. 16, 7, December 1964.

330. Gaillard, J.: Foreign standards for metric threads vary in many details. American Machinist, vol. 89, 133-136, 7 June 1945. Also, Industrial Standards, vol. 16, 183-187, August 1945.

331. Gaillard, John: What is the present status of metric screw thread standards? Industrial Standardization, American Standards Assn., August 1945.

332. Gaillard, John: World unification of length measurements. Standards Engineering, vol. 11, 6-7, April-May 1959.

333. Gardner, I.C.: Light waves and length standards. Optical Society of America, vol. 45, 685, July 1955.

334. Gardner, A.R.: The metric system may have tough going - with consumers, at least (developments to watch column). Electronic Design, p. 14, 1 March 1966.

335. Gasparovic, N.: The problem of two different systems of measurement. Naval Engineers Journal, 783-784, November 1960.

336. Gaster, Leon: Metric system and illuminating engineering. Illuminating Engineer, vol. 10, 283-284, November 1917.

337. General conference on weights and measures, 10th meeting, Paris and Sevres, 5-14 October 1954. Scientific American, vol. 192, 52, March 1955. Also, Science, vol. 120, 1007-1009, 17 December 1954. Also, Canadian Chemistry Process, vol. 39, 114, March 1955.

338. General rules for the use of decimal multiples and submultipes of the SI units. Danish Standardization Institute, 22pp, January 1967.

339. Gerber, H.J.: Compound rest adjusts lathe tool to diameters dimensioned in metric system. Machinist, vol. 67, 132, June 1961.

340. German Standards Association (DNA): Din standardization in Germany. D-191, 12pp, 1966.

341. Giles, R.C.: Let's not go metric. Standards Engineering, vol. 15, 6-8, September 1963.

342. Give an inch, get a centimeter; British conversion to metric system. Business Week, P. 34, 5 June 1965.

343. Glasgow, H. McDonald: Metric system in England. Scale Journal, vol. 3, 11-14, 10 September 1917.

344. Glass, H.J.: Why SI units? Paper presented at Standards Assn. Section, BSI conference on the change to the metric system in the UK, and its relation to international standards, British Standards Institution, London, 8pp, 14-15 April 1966.

345. Glazebrook, Sir Richard: Standards of measurement: their history and development. Nature, Supplement, no. 3218, 4 July 1931.

346. Glen, Eloise J.: The metric system--a unit for teachers in service training. Anapolis, 19pp, 13 August 1962.

347. Going metric; Britain's first year. Machine Design, vol. 39, 34, 16 February 1967.

348. Going metric; counting the cost. Statist, vol. 191, 161, 3 February 1967.

349. Going metric fast enough? Engineering, vol. 202, 831, 11 November 1966.

350. Going metric, first stages. British Standards Institution, London, Publication PD 6245, 8pp, 1967.

351. Going metric; little toe in. Economist, vol. 215, 1011, 29 May 1965.

352. Going metric--what will it mean? Consumer Report No. 19, Women's Advisory Committee of the British Standards Institution, London, Spring 1966.

353. Gokhale, Madhu S.: Metricization, British style. Standards Engineering, vol. 16-17, June-July 1967.

354. Good, P.: Metric system. Engineering, vol. 166, 319, 1 October 1948.

355. Gore, James Howard: The metric system and international commerce. Forum, vol. 31, 739-744, August 1901.

356. Gould, Benjamin A.: Address on the metric system of weights and measures, delivered at the 184th meeting, Commercial Club of Boston. Government Printing Office, Washington, 15pp, 18 February 1888.

357. Gould, E. Sherman: Metric system: a practical view. Cassier's Magazine, vol. 22, 521-524, August 1902.

358. Gourlie, William H.: Opinion favors the inch. Mechanical Engineering, vol. 87, 35, March 1965.

359. Grace, John F.: Values of metric system queried. New York Times, p. 24, col. 6-7, 12 April 1957.

360. Grade, O.K.: Which metric system. Products Engineering, p. 30-31, 24 October 1960.

361. Graham, J.D.: Measurement systems and world communications. SAE Paper 660084, 4pp, for meeting on 10-14 January 1966.

362. Grams and meters enter world war against feet and pounds. Current Opinion, vol. 64, 72, January 1918.

363. Grandma measured by guess and by gosh. American Home, vol. 61, 70-71, May 1959.

364. Grassmann, P.; A. Ostertag: Zum uebergang auf das MKSA system. Schweiz Bauzeitung, vol. 77, 249-255, 23 April 1959.

365. Grassmann, P.: Zur frage nach dem zweckmaessigsten massystem. VDI Zeit, vol 98, no. 33, 1829-1834, 21 November 1956.

366. Gray, R. C.: Metric system III. Electronics, vol. 36, 4, 9 August 1963.

367. Great Britain moves toward metric system. Industrial Research, vol. 7, 27, July 1965.

368. The great debate - should we adopt the metric system? American Engineer, 23-26, September 1959.

369. Green, Eric: Canada inches toward the metric system. Paper presented at ISA Conference, Chicago, International Standards Assn., 11-14 September 1967.

370. Green, Marvin H.: International and metric units of measurement. Chemical Publishing Co., Tudor Publishing Co., N. Y., 116pp, 1961.

371. Greenslade, T. B.: Use metric system. American Photography, p41, September 1947.

372. Gressit, J. L.: Metric system (letter). Science, vol. 140, 814-815, 20 August 1965.

373. Guide for specifying metric values. Indian Standards Institution, USA Standards Institution, IS 1722, 1960.

374. A guide for the use of the metric system in the construction industry. British Standards Institution, London, PD 6031, February 1967.

375. Gunton, Michael: British industry sees change from inch to metrics inevitable. Metalworking News, 28 September 1964.

376. Hahn, Eleonore, F.: The metric system. The Clubwoman, General Federation of Women's Clubs, September 1937.

377. Hall, Alton L.: Metric system again discussed. Englewood (N. J.) Press, 5 September 1925. (Reply to Samuel S. Dale, 1 August 1925 article.)

378. Hallock, William; Herbert T. Wade: Evolution of weights and measures and the metric system. Macmillan, N. Y., 304pp, 1906.

379. Halsey, Frederick A.: Change to metric system undesirable. Engineering and Mining Journal, vol. 105, 1013-1014, 1 June 1918.

380. Halsey, Frederick A.: Metric equivalent scheme. Machinery, vol. 27, 665-667, March 1921. Also, 4pp, American Institute of Weights and Measures, N. Y.

381. Halsey, Frederick A.: Metric fallacy; an investigation of the claims made for the metric system, and especially of the claim that its adoption is necessary in the interest of export trade. American Institute of Weights and Measures, 2nd edition, 229pp, 1920.

382. Halsey, Frederick A.: Metric system. Nation, vol. 78, 215-216, 17 March 1917. Also review of Metric Failure in the Textile Industry by Samuel S. Dale.

383. Halsey, Frederick, A.; et al: Metric system fallacy. Cassier's Magazine, vol. 30, 36-57, May-July 1906.

384. Halsey, Frederick A.: Samuel S. Dale: Metric fallacy; metric fallacy in the textile industry. Macmillan, N. Y., 227pp, 1904.

385. Halsey, Frederick A.: Metric system in engineering. Sibley Journal of Engineering, vol. 32, 134-137, June 1918.

386. Halsey, Frederick, A.: Metric system in export trade. Nation, vol. 106, 359-362, 28 March 1918.

387. Halsey, Frederick A.: Metric system in export trade. Textile World Journal, vol. 53, 5201, 4 May 1918.

388. Halsey, Frederick A.: Pan-Americanism in weights and measures. American Machinist, vol. 52, 784-786, 20 April 1920.

389. Halsey, Frederick A.: Present status of the metric argument. American Machinist, vol. 54, 815, 12 May 1921.

390. Halsey, Frederick A.: Weights and measures of Latin America. American Society of Engineers, N. Y., 34pp, 1918.

391. Hamilton, J. S.: Going metric. Engineer, vol. 221, 160-161, 28 January 1966. Discussion by H. A. R. Binney, vol. 221, 428, 18 March 1966.

392. Hampsch: It's time to take action on our outmoded measurement system. Science Digest, 58-60, December 1947.

393. Hansen, R. E.: Which metric system. Products Engineering, p. 30, 24 October 1960.

394. Harrop, P. C.: The identification of the screw threads of the world. Paper presented at Standards Assn. Section, BSI conference on the change to the metric system in the UK, and its relation to international standards, British Standards Institution, London, 8pp, 14-15 April 1966.

395. Harrigan, Mildred: American laziness and the metric system. Educational Review, vol. 70, 138-139, October 1925.

396. Harrigan, M. H.: Metric system in schools. National Education Association Journal, vol. 14, 170, May 1925.

397. Harrison, P. W.: Industrial needs as reflected by NPL investigations on accuracy of measurement. Machinery, London, vol. 100, 1237-1242, 30 May 1962.

398. Harrison, R. E. W.: Metric system; why? Naval Engineers Journal, vol. 77, 901-902, December 1965.

399. Hartigan, Joseph: Metric system; importance of it as a universal standard in international commerce. Scientific American Supplement, vol. 83, 175-176, 17 March 1917.

400. Hart, K. H.; K. M. Baird: On relation between old and new definition of international metre. Canadian Journal of Physics, vol 39, 781-787, October 1960.

401. Hartness, James, et al: Inches versus millimeters. Machinery, vol. 26, 715-719, April 1920.

402. Hart, P. J.: Conversion factors. Science, vol. 132, 1558 & 1898, 23 December 1960.

403. Hartshorn, L.: Metric system. Engineering, vol. 166, 307-308, 24 September 1948.

404. Hastings Jr, Russell: Standardizing the inch. Magazine of Standards, vol. 37, 169-172, June 1966.

405. Hawthorne, R.: Report on a national survey. Standardization - Keystone of Industrial Progress, American Standards Association proceedings, 10th Natl Conference on Standards, pp6-8, 1959.

406. Hawthorne, R.: Should American industry convert to the metric system. Industry, vol. 26, 16 & 48-52, October 1960.

407. Hawthorne, R.: Should we go to the metric system? Space/Aeronautics, vol. 31, 38, May 1959.

408. Hebra, A.: Metric system in So. America. Product Engineering, 20 July 1959.

409. Heine, H. W.: Metric units needed in college chemistry. Education, vol. 71, 493-496, April 1951.

410. Helgren, Fred J.: Metric supplement to mathematics. Metric Association, Inc., Waukegan, Illinois, 28pp, 1967.

411. Helgren, Fred J.: The metric system in the elementary grades. Metric Association, Inc., Waukegan, Illinois, Arithmetic Teacher, 349-353, May 1967.

412. Hemmings, H. F.: English opinion on the metric system. Machinery, vol. 27, 150, October 1920.

413. Henkel, D.: Meter versus yard. Science, vol. 119, 567-568, 23 April 1954.

414. Henning, G. E.: Metric metrology in aerospace engineering. Silver Anniversary Conference, Society of Aeronautical Weight Engineers, Paper No. 526, 94pp, 4 May 1966.

415. Henning, G. E.: The metric system--where are we? Paper presented at 26th Annual Conference, Society of Aeronautical Weight Engineers, Boston, 27pp, 1-4 May 1967.

416. Henning, Gordon: Increasing costs of the U. S. measurement system. Paper presented at ISA Conference, Chicago, 11-14 September 1967.

417. Hersey, Irwin: Metrology. Engineering Opportunities, pp26-30, May 1967.

418. Hervey, W.: Metric system and historical record. Science, vol. 103, 733, 21 June 1946.

419. Hess, A. L.: Aid to using the metric system. Scholastic Science & Mathematics, vol. 59, 98, February 1959.

420. Hesse, Robert: Metric system. Engineering & Mining Journal-Press, vol. 102, 761, 21 October 1916.

421. Hexagon socket screws and wrench keys: metric series. British Standards Institution, London, BS 4168.

422. Hickman, Bill: U. S. /German tank design uses metrics. Metalworking News, 7 June 1965.

423. Hildebrand, Clifton, compiler: Metric literature clues; a list of references to books, pamphlets, documents, and magazine articles on metric standardization of weights and measures. World Trade Club, San Francisco, 64pp, 1920.

424. Hirsch, Gustav: Inch-millimeter conversion tables. American Machinist, 30 December 1957 and 24 February 1958 (revised).

425. Historic change to decimals. The Daily Telegraph, London, 2 March 1966.

426. Hodges, Luther, H.: Sees metric system use inevitable. Metalworking News, 25 February 1963.

427. Hollomon, J. Herbert: Implication far reaching study advised. Metalworking News, 28 September 1964.

428. Hollomon, J. Herbert: Statement on S. 774, a bill to study increased use of the metric system. U. S. Dept. of Commerce, Washington, 14 July 1965.

429. Holm, G. R.: Modify SI units for everyday use. Material Research & Standards, p. 645, December 1965.

430. Holmes, H. N.: Language and tools. From the book: Out of the test tube, 46-55, Emerson, 1943.

431. Homan, A. Gerloff: The changeover to the metric system. Finance, p. 36, February 1966.

432. Hough, F. W.: Adoption of the metric system. Science, vol. 129, 532, 27 February 1959.

433. Hough, F. W.: American geophysical union committee for the study of the metric system in the United States. Institution of Radio Engineers proceedings, vol. 47, 584, April 1959.

434. Hough, F. W.: Reports on the AGU study of the metric system in the United States. Institution of Radio Engineers proceedings, vol. 48, 1168, June 1960.

435. Hough, F. W.: Why adopt the metric system. Civil Engineering (ASCE), vol. 30, 73-75, November 1960.

436. House reports on public bills, 89th Congress. U. S. House of Representatives, Washington, Item 1008-A, 6pp, 17 February 1966.

437. House rules committee kills metric system study. Science News, vol. 90, 180, 10 September 1966.

438. House rules committee rejects bill to study whether U. S. should adopt metric system. New York Times, p. 67, 26 August 1966.

439. Howard, John N.: From the editor (miscellaneous items regarding the metric system). Applied Optics, vol. 6, 1009-1010, June 1967.

440. Howard, John N.: Metric contennial. Applied Optics, vol. 5, no. 8, 1251-1252, August 1966.

441. Howard, John N.: The metric system and technical literature. Paper presented at 22nd ISA conference, Chicago, M15-3-MESTIN, Part I, no. 22, 3pp, 11-14 September 1967.

442. Howlett, L. E.: Crisis in measurement. Engineering Journal, vol. 44, 73-76, April 1961.

443. Howlett, L. E.: Does the metric system threaten Canadian trade? Engineering Journal, vol. 48, 19-21, November 1965.

444. Howlett, L. E.: International basis for uniform measurement. Science, vol. 158, 72-74, 6 October 1967.

445. How many barleycorns to an inch? Los Angeles (Calif.) Times, 18 September 1961.

446. How the length standards compare. Product Engineering, p. 63, 17 February 1958.

447. Huff: Battle of the yards and meters. Science Digest, 13-17, January 1955.

448. Humburger, E. L.; Wilip, E. K.: For metric system (letters). Chemical & Engineering News, p. 4, 3 December 1962.

449. Huntoon, R. D.: Concept of a national measurement system. Science, vol. 158, 67-71, 6 October 1967.

450. Hurley, Jr., Neil C.: Changing to meters is billion dollar project. International Commerce, p. 9, 1 October 1962.

451. Hvistendahl, H. F.: Engineering units and physical quantities. MacMillan & Co., London, 1964.

452. Hvistendahl, H. S.: Let's adopt the international MKS system. Engineer, vol. 212, 1062-1064, 29 December 1961.

453. Hyek, J. L.: Metric system and the business teacher. Business Education World, vol. 46, 16-17, June 1966.

454. IEEE recommended practice for units. IEEE Spectrum, vol. 3, 169-173, March 1966.

455. If all the rules do change. U. S. News, vol. 58, 97, 28 June 1965.

456. Implications of the metric system. Metal Progress, vol. 86, 93-101, December 1964.

457. Improving weights and measures; conference in the U. S. Engineering, vol. 180, 880, 30 December 1955.

458. Inch and meter. Product Engineering, vol 35, 76, 22 June 1964.

459. Inch and metric system interchangeability. Engineering, vol. 186, 640, 14 November 1958.

460. Inch by inch Britain goes metric. Engineering, vol. 199, 788, 18 June 1965.

461. Inching up on the inch. Product Engineering, p. 61, 17 February 1958.

462. Inch-metric conversion guide. Fastener Standards, 4th edition, compiled by Industrial Fasteners Institute, 392-393, 1965.

463. Inch-Millimeter conversion for industrial use. American Standards Assn. Standard B48. 1-1933, 13 March 1933.

464. Inches or meters. American City, vol. 80, 374, August 1965.

465. Inches or meters; reader reaction. Mechanical Engineering, vol. 87, 150-155,

466. Inch that isn't. Newsweek, vol. 53, 32, 4 May 1959.

467. Inch vs. metric. Product Engineering, vol. 35, 71-72, 3 August 1964.

468. Inch vs. metric system. Standards Engineering, vol. 15, 1-2, September 1963.

469. In defense of drams and scruples. Saturday Evening Post, vol. 238, p. 84, 28 August 1965.

470. India adopts metric system. New York Times, p. 18, col. 8, 2 October 1958.

471. Indian cotton textile industry to adopt metric system of weights and measures. Foreign commerce weekly, vol. 58, 29, 22 July 1957.

472. India's new metric system creates more paperwork here. New York Times, p. 14, col. 3, 25 September 1960.

473. Industry starts on "going metric" road. Ministry of Technology, London, 9pp, 21 April 1956.

474. Industry threads its way . . . inch vs. meter. International Commerce, p. 3, 3 August 1964.

475. Industry views the metric system. Metal Progress, December 1964.

476. Ingalls, Walter R.: Shall Great Britain and America adopt the metric system? Royal Society of Arts Journal, vol. 65, 604-610, 20 July 1917.

477. Ingalls, W. R.: Why the metric system should not be adopted. Mining and Metallurgy, vol. 173, 15-16, May 1921.

478. Interchangeability in the inch and metric systems. Engineer, vol. 206, 494, 26 September 1958.

479. Interchangeability in the inch and metric systems. Chemistry & Industry, p. 1501, 16 November 1958.

480. International Bureau of weights and measures. Valve World, vol. 16, 15-16, January 1919.

481. International commission favors use of metric system. Commerce Reports, no. 269, 628, 15 November 1918.

482. International committee advances work on quantities, units, symbols. Magazine of Standards, vol. 34, 311-312, October 1963.

483. International committee on weights and measures, 1962 meeting. U. S. Natl Bureau of Standards, Washington, NBS Technical News Bulletin, vol. 47, 29, 1963.

484. International language. Gas, vol. 40, 91, September 1964.

485. International participation in use of metric system increases. Materials Research & Standards, vol. 7, 179, April 1967.

486. The international system of units. American Society for Quality Control Annual Technical Conference Transactions, p. 431, 1965.

487. International system of units. Coke & Chemistry USSR (English translation), no. 9, 5[illegible]-56, 1962.

488. International system of units. National Aeronautics & Space Administration, Washington, Resolution no. 13, TTF-200, February 1964.

489. International system of units (SI) handbook. Brown Engineering Co., Huntsville, Alabama, 27pp, 1965.

490. International system (SI) units. British Standards Institution, London, BS 3763, 1964.

491. International yard and pound. Science, vol. 129, 260, 30 January 1959.

492. Intl Organization for Standardization: Basic quantities and units of the SI, ISO Recommendation R31. (ISO/R31/Part I-1965(E)), 2nd Edition, 13pp, December 1965.

493. Intl Organization for Standardization: Clearance holes for metric bolts, ISO Recommendation R273. (ISO/R273/1962(E)), 3pp, September 1962.

494. Intl Organization for Standardization: Conversion of toleranced dimensions from inches into millimetres and vice versa, ISO Recommendation R370. (ISO/R370/1964(E)), 11pp, May 1964.

495. Intl Organization for Standardization: Guide to the use of preferred number and of series of preferred numbers. ISO Recommendation R17 (ISO/R17-1955(E)), 11pp, April 1956.

496. Intl Organization for Standardization: ISO metric screw threads for screws, bolts, and nuts (diameter range 6 to 39mm). ISO Recommendation R262 (ISO/R262-1962(E)), 4pp, July 1962.

497. Intl Organization for Standardization: ISO metric screw threads, general plan (diameter range 0.25 to 300mm). ISO Recommendation R261 (ISO/R261-1962(E)), 8pp, July 1962.

498. Intl Organization for Standardization: ISO metric series for basic thickness of sheet and diameters of wire. ISO Recommendation R388 (ISO/R388-1964(E)), 7pp, October 1964.

499. Intl Organization for Standardization: ISO system of limits and fits, Part I, general, tolerances and deviations. ISO Recommendation R286 (ISO/R286-1962(E)), 68pp, December 1962.

500. Intl Organization for Standardization: Preferred numbers, series of preferred numbers. ISO Recommendation R3 (ISO/R3-1953(E)), 7pp, March 1954.

501. Intl Organization for Standardization: Quantities and units of electricity and magnetism. ISO Recommendation R31, Part V (ISO/R31/Part V-1965(E)), 18pp, November 1965.

502. Intl Organization for Standardization: Quantities and units of heat. ISO Recommendation R31, Part IV (ISO/R31/Part IV-1960(E)), 9pp, December 1960.

503. Intl Organization for Standardization: Quantities and units of mechanics. ISO Recommendation R31, Part III (ISO/R31/Part III-1960(E)), 19pp, December 1960.

504 Intl Organization for Standardization: Quantities and units of periodic and related phenomena. ISO Recommendation R31, Part II (ISO/R31/Part II-1958(E)), 6pp, February 1958.

505. Intl Organization for Standardization: Screw thread. ISO Recommendation R68 (ISO/R68-1958(E)), 7pp, August 1958.

506. Intl Organization for Standardization: Slotted and castle nuts with metric thread. ISO Recommendation R288 (ISO/R288-1963(E)), 3pp, January 1963.

507. Irwin, Keith Gordon: Romance of weights and measures. 140pp, 1960.

508. Irwin, K G.: Fathoms and feet, acres and tons; an appraisal. Scientific Monthly, vol. 72, 9-17, January 1951.

509. Isaacs, S. T.: Horses, anyone . . . inch vs. metric. Automatic Machining, p. 51, March 1967.

510. Isaacs, S. T.: Metric conversion. Cryogenic Technology, p. 26, May-June 1966.

511. Isaacs, T.: Fluid power design forum. Hydraulics & Pneumatics, vol. 19, 14, January 1966.

512. Isaacs, T.: Metric conversion. The Agent & Representative, November 1965.

513. ISA session considers implementation of the metric system. Magazine of Standards, vol. 37, 341, 343, November 1966.

514. ISO metric fastenings. The Engineer (British), vol. 223, 390, 10 March 1967.

515. ISO screw thread system. Fastener Standards, 4th edition, compiled by Industrial Fasteners Institute, 308-310, 1965

516. ISO metric threads for industry. The Engineer (British), vol. 220, 5732, 3 December 1965.

517. ISO metric; technical data on the ISO metric system. GKN Bolts & Nuts Ltd., Darlaston, Staffordshire, England, 9pp, 1967.

518. Jackson, S.: Metric system in theory and practice. Allman & Son, Ltd., London, 99pp, 1900.

519. Jacobson, A.W.: Metric system belongs in math education; abstract. SAE Journal, vol. 69, 95, June 1961.

520. Jacobson, A.W.: Significance of change to metric system of mathematics education. Paper presented at SAE meeting, Detroit, No. 287C, 3pp, 9-13 January 1961.

521 Japan adopts metric system. American Machinist, vol. 55, 785, 10 November 1921.

522. Japan's switch to metrics. Science News, vol. 91, 288-289, 25 March 1967.

523. Japan to inaugurate metric system October 1. New York Times, p. 19, col. 5, 6 September 1958.

524. Jaroszynski, W.S.: The SI challenges the inch. Paper presented at NSPE meeting, St. Louis, October 1966.

525. Jeffries, T.W.: Teaching the metric system. Science Teacher, vol. 28, 53, February 1961.

526. Jerrard, H.G.: A dictionary of scientific units, including dimensionless numbers and scales. Chapman, London, 1964.

527. John Bull redefines his terms. Product Engineering, vol. 35, 65, 17 February 1964.

528. Johnson, J.T., compiler: The metric system of weights and measures; 20th yearbook of the National Council of Teachers of Mathematics. Columbia University Bureau of Publications, Teachers College, N.Y. 1948.

529. Johnson, J. T.: Metric system. School Science & Mathematics, vol. 44, 717-721, November 1944.

530. Johnson, J. T.: The metric system of weights and measures. Paper presented at 43rd National Conference on Weights & Measures, 10pp, 11 June 1958.

531. Johnson, J. T.: The public schools and the metric system. Measurement, 1-6, April 1933.

532. Johnson, J. T.: A survey on the use of metric measures. Reprint from the official report of the American Educational Research Association on the role of research in educational progress, Washington, 1937.

533. Johnson, J. T.: Three studies on the effect of compulsory metric usage, another view. Journal of Educational Research, vol. 37, 587-592, April 1944.

534. Johnson, J. T.: Turning the tables of decimal equivalents. Modern Machine Shop, June 1945.

535. Johnson, P.: Education and the metric system. Engineering, vol. 166, 318-319, 1 October 1948.

536. Jones, Hilton Ira: Why not now? School Science & Mathematics, vol. 19, 512-519, June 1919.

537. Jones, H. I.; H. D. Sharp: Adopt the metric system? Rotarian, vol. 70, 28-30, April 1947.

538. Jones, Sarah Ann: Weights and measures in Congress. U.S. Dept. of Commerce, National Bureau of Standards, Washington, Misc. Publication M122, 17 March 1936.

539. Judd, Charles H.: Certain neglected social institutions. Elementary School Journal, vol. 25, 254-263, December 1924.

540. Judson, L. V.: Units and systems of weights and measures. U.S. Dept. of Commerce, National Bureau of Standards, Washington, Circular no. 570, 29pp, 21 May 1956.

541. Judson, L. V.: Units and systems of weights and measures, their origins, development, and present status. National Bureau of Standards, U.S. Dept. of Commerce, Letter Circular 1035, January 1960.

542. Judson, L. V.: Units of weight and measure (United States customary and metric) definitions and tables of equivalents. U.S. Dept. of Commerce, National Bureau of Standards, Washington, Misc. Publication no. 214, 64pp, 1 July 1955.

543. Judson, L. V.: Units of weight and measure (U. S. customary and metric) definitions and tables of equivalents. U. S. Dept. of Commerce, National Bureau of Standards, Washington, Misc. Publication 233, 62pp, 20 December 1960.

544. Judson, L. V.: Weights and measures standards of the U. S.; a brief history. U. S. Dept. of Commerce, National Bureau of Standards, Washington, Misc. Publication 247, 1963.

545. Karpinski, Louis C.: Brief historical consideration of the metric system. Science, vol. 53, 156-157, 18 February 1921.

546. Kauffman, H. N.: Adopt the metric system. School Science & Mathematics, vol. 19, 82-84, January 1919.

547. Kayan, C.: Evolution versus revolution – problem of our unit-systems. Paper presented at SAE meeting, no. 287A, 7pp, 9-13 January, 1961.

548. Kayan, C. F.: Let's tackle unit systems problem now. SAE Journal, vol. 69, 95, June 1961.

549. Kayan, C. F.: New question in old controversy; which metric system? Product Engineering, vol. 31, 44-45, 15 August 1960. Discussion: vol. 31, 28-31, 24 October 1960.

550. Kayan, C. F., editor: Systems of units; national and international aspects. American Assn. for the Advancement of Science, Engineering Section, Washington, Publication no. 57, 297pp, 1959.

551. Kayan, C. F.: Towards resolution of chaos and confusion in our systems of units. Paper no. 60-SA-26, presented at ASME meeting, 8pp, 5-9 June 1960.

552. Kayan, C. F.: The transition. Mechanical Engineering, vol. 84, 46-47, July 1962.

553. Kayan, C. F.: Unit-system picture has many angles. Paper No. 660303, presented at SAE meeting, 6pp, 25-28 April 1966.

554. Kayan, C. F.: Which metric system? Product Engineering, vol. 31, 44-45, 15 August 1960.

555. Kennedy, Arthur Edwin: Vestiges of pre-metric weights and measures persisting in metric system Europe, 1926-1927. Macmillan, N. Y., 189pp, 1928.

556. Kennedy, John F.: (Telegram to SES 12th annual convention). Standards Engineering, vol. 15, 1, November 1963.

557. Kennelly, Arthur E.: Adoption of the metric system in the United States. Scientific Monthly, vol. 4, 193-219, March 1917.

558. Kennelly, A. E.: Metric system of weights and measures. Popular Science Monthly, vol. 66, 319-328, February 1905.

559. Kilogram of cure, Eli Lilly and company converts to the metric system. Chemical & Engineering News, vol. 35, 38, 28 January 1957.

560. Kilos rather than pounds. Industrial & Engineering Chemistry, vol. 49, Supplement 25A-26A, March 1957.

561. Kinslow, Max; Betty M. Majors: Systems of units and conversion tables. Arnold Engineering Development Center, Air Force Systems Command, Report no. AEDC-TDR-62-6, AD 272545, 68pp, February 1962.

562. Kjemtrup, J. E.: All out, now. Mechanical Engineering, vol. 84, 41-47, July 1962.

563. Knightley: Let's compare a liter and a quart. School Science & Mathematics, vol. 64, 51-52, January 1962.

564. Krenerick, H. C.: English and metric units in laboratory work. School Science & Mathematics, vol. 51, 646-648, November 1951.

565. Kinkaid, John F.: International standards and the metric system — a time for decision. U. S. Dept. of Commerce News, Washington, 30 December 1967.

566. Kunkle, S. L.: How to teach high school students any metric units they need to know. Education, vol. 71, 491-492, April 1951.

567. Kunz, George F.: Metric system. Nation, vol. 106, 359-362, 28 March 1918.

568. Kunz, George F.: Metric system; the international language of weights and measures. Scientific American Supplement, vol. 83, 214, 7 April 1917.

569. Kunz, George F.: New international carat of two hundred milligrammes. Scientific American Supplement, vol. 76, 82-83, 98-99, 9-16 August 1913.

570. LaFond, C. D.: Conversion of Singer installation to be completed within 18 months; Singer-metrics. Missiles & Rockets, vol. 15, 41-42, 10 August 1964.

571. Laing, W. K.: Programme for the change to the metric system in the construction industry. British Standards Institution, London, PD 6030, 14pp, February 1967.

572. Lambercier, S.: Why force us to speak a foreign language? American Machinist, vol. 48, 29, 3 January 1918. Discussion: vol. 48, 373-374, 28 February 1918.

573. Langevin, L.: Story of the metric system. UNESCO Courier, vol. 15, 20-25, March 1962.

574. Larrick, G. P.: Sees few problems in switch to metric system. Oil Paint & Drug Reporter, vol. 188, 3+, 9 August 1965.

575. Latest metric move; advocates of the system have plan of action for meeting in Lima. Iron Age, vol. 114, 138, 17 July 1924.

576. Latin Americans trained in standardized weights. Science News Letter, vol. 88, 217, 2 October 1965.

577. Lawson, Robert E.: A hospital's conversion to the metric system. Hospital Pharmacy (Lippincott's) vol. 1, 35-38, October 1966. Also, Hospitals (Journal of the American Hospital Assn.), vol. 40, 120, 16 November 1966.

578. Leake, C. D.; R. M. Drews: Metric system; pro and con. Popular Mechanics, December 1960.

579. Learning the value of the metric system. Scientific American, vol. 115, 4, 1 July 1916.

580. Lee, A. D.: Metric trouble. American Machinist, vol. 53, 618, 30 September 1920.

581. Lee, F. M.: ISA conversion – more detailed analysis. Canadian Machinery, vol. 65, no. 4, 122-124, April 1954.

582. Lee, F. M.: ISA metric tolerances won't work in inch system. Canadian Machinery, vol. 64, no. 12, 533-534, 536, 538, December 1953.

583. Legacy. Sports Illustrated. 29 June 1964.

584. Legget, R. F.: International standards – a transatlantic view. Paper presented at Standards Assn. Section, BSI conference on the change to the metric system in the UK, and its relation to international standards, British Standards Institution, London, 11pp, 14-15 April 1966.

585. Legget, R. F.: Join metric system, ASTM head advises. Product Engineering, vol. 37, 31, 1 August 1966.

586. Leimkuehler, F. R.: When will we adopt the metric system? AIA (American Institute of Architects) Journal, August 1960.

587. LeMaraic, A. L.: Two-way conversion tables of units of weights and measures, metric and U. S. customary. Abbey Books, Greenwich, Conn., 120pp, 1953.

588. Lemert, Bula: Does the metric system measure up? Coronet, 98-103, May 1966.

589. Leonard, H. S.: The use and abuse of measurement as a facet of scientific research. University of Washington Press, Seattle, 1962.

590. Let's go metric; tables. Air Conditioning, Heating & Refrigeration News, vol. 102: p. 15, 6 July; p. 26, 13 July; p. 15, 20 July; p. 31, 3 August; p. 25, 10 August; p. 33, 17 August; p. 20, 24 August; vol. 103: p. 23, 7 September; p. 44, 14 September; p. 15, 28 September 1964.

591. Letter urges adoption of system to solve "truth in packaging" problem. New York Times, p. 46, 9 December 1966.

592. Lilly converts to metric system. Science, vol. 127, 332, 14 February 1958.

593. Linear inch or meter. Tooling & Production, 76-83, September 1964.

594. Lion, K. S.: The metric system. Medical Opinion & Review, vol. 88, 91, September 1967.

595. Lipkowitz, Irving: Testimony (for Chamber of Commerce of the U. S., before the Senate Committee) on S. 774, a bill calling for the study of practicability of converting to the metric system of measurement in the U. S. Chamber of Commerce of the U. S., Washington, 14 July 1965.

596. Listing of usual and unusual names of units of weights and measures used in various countries, before and after the introduction of the metric system. Encyclopedia Britannica, W. Benton, publisher, Chicago, vol. 23, 488E-488H, 1962.

597. Litres and grammes in bottles and jars. British Standards Institution, London, Women's Advisory Committee, Consumer Report, no. 24, Summer 1967.

598. Llano, Antonio: Metric system. Bulletin of the Pan American Union, vol. 59, 1000-1007, October 1925.

599. A look at both sides of the metric question. Ethyl News, 22-23, Winter 1965/1966.

600. MacAdie: Drams, scruples, and kings' noses. Atlantic Monthly, vol. 134, 820-822, December 1924.

601. MacDonald, Charles: Metric system of weights and measures. Royal Philosophical Soceity of Glasgow Proceedings, vol. 41, 65-83, 1910.

602. MacLean, J. A.: U. S. should not adopt a whole new system of measurement. Nations Business, p. 874, January 1966.

603. McFarland, W. M.: Metric system fallacy. Cassier's Magazine, vol. 29, 293-299, February 1906.

604. McGinnis, Frank: Status of the proposed changeover to the metric system in the United States. Industrial Quality Control, vol. 18, 4-6, November 1961.

605. McKay, J. H.: Next step for the metric system? 20-hour days, 200° circles. Product Engineering, vol. 31, 46, 15 August 1960.

606. McKay, H. C.: Notes from a laboratory. American Photography, p.40, November 1947.

607. McKee, J. E.: When millennium arrives – Look out for gigafirkins. Los Angeles Times, 16 October 1966.

608. McKie, Douglas: The origins of the metric system. Endeavor, vol. 22, 1-3, 1963.

609. McLaughlin, Warren M.: Five-point program suggested for conversion to metric system. Oceanology International, p. 45, March-April 1967.

610. McNish, A. G.: The basis of our measuring system. Proceedings of the Institute of Radio Engineers, vol. 47, 637, May 1959.

611. McNish, A. G.: Fundamentals of measurement. Electro-Technology, vol. 71, 113-128, May 1963.

612. McNish, A. G.: The international system of units. American Society for Quality Control, Annual Technical Conference Transactions, 1965.

613. McNish, A. G.: International system of units (SI). Materials Research & Standards, vol. 5, 528-532, October 1965.

614. McNish, A. G.: Measurement standards. International Science & Technology, 58-66, November 1965.

615. McNish, A. G.: Present aspects of the trend toward SI units. 22nd ISA Conference, Chicago, 11-14 September 1967.

616. McPherson, Archibald T.: Problems involved in determining the cost and the optimum time of conversion to the metric system. Paper presented at the Metric Assn. 1962 annual meeting. U. S. Dept. of Commerce, Office of Technical Services, 28 December 1962.

617. Machine screws and machine screw nuts – metric series. British Standards Institution, London, BS 4183.

618. Machine tools; metric enthusiasm. Economist, vol. 216, 464, 31 July 1965.

619. Magnus, H. A.: Conversions in English and metric systems; reference book sheet. Product Engineering, vol. 27, 215, 217, October 1956.

620. Magnus, A.: Conversion in English and metric systems. Product Engineering, vol. 28, A30-A31, Mid-October 1957.

621. Magurn, Arnott: Canada engineering institute survey to encompass all facets of industry. Metalworking News, 28 September 1964.

622. Manchester, H.: Should we adopt the metric system? Readers Digest, vol. 74, 135-140, April 1959.

623. Many metalworkers favor metric shift study. Steel, vol. 157, 44, 26 July 1965.

624. Map makers oppose metric system. Product Engineering, p. 63, 17 February 1958.

625. Maraic, A. L.: Two way conversion tables of units of weights and measures (metric and United States customary). Greenwich, Conn., Abby Books, 1953.

626. Martin, K. G.: Export trade and the metric system. Iron Age, vol. 104, 715, 11 September 1919.

627. Martinez, Jose R.: On the use of proper names. IEEE Spectrum, vol. 3, 162, August 1966.

628. Mason, A. H.: The machine tool industry and the metric system. Paper presented at Standards Assn. Section, BSI conference on the change to the metric system in the UK, and its relation to international standards, British Standards Institution, London, 9pp, 14-15 April 1966.

629. Mateos, M.: Integration of British and metric system. ASME Paper 63-PROD-24, 4pp, 1963.

630. Mateos, M.: Merging with the metric system. Mechanical Engineering, vol. 85, 60-61, November 1963.

631. Mattison, G. D.: Deere makes dual use of English-metric units. SAE Journal, vol. 74, 62-68, November 1966.

632. Mauldin, Bill: A cartoon based on Britian's desertion of the English system of measurements. Los Angeles Times, 9 June 1965.

633. Mayer, Joseph: Metric question. Science, vol. 142, 1123-1124, 29 November 1963.

634. Mayer, J.: Metric system developments. School Science & Mathematics, vol. 64, 221-228, March 1964.

635. Mayer, Joseph: Metric system vs. the English system of weights & measures. National Industrial Conference Board, sponsor; 261pp, Century Co., publishers, 1921.

636. Mayer, Joseph: Why the metric movement is opposed for business and nation. Forbes, vol. 13, 631-63[illegible], 1 March 1924; vol. 14, 26-28+, 12 April 1924.

637. Measured response; Britain to abandon imperial standard. Newsweek, 7 June 1965.

638. Measurement, but not necessarily gas. Gas, vol. 35, 56, August 1959.

639. Measuring systems and their history. Report no. 1, 26pp, Ford Motor Co., Dearborn, Mich., 1966.

640. Mechanical engineers society against metric system; won't give an inch. Hughes Aircraft Co., Hughes News, 26 March 1965.

641. Mechtly, E.A.: The international system of units; physical constants and conversion factors. Washington, D.C., NASA, Scientific & Technical Information Division, NASA SP-7012, 4th printing, 20pp, 1964.

642. Memorandum for the MKS system of electrical and magnetic units. British Standards Institution, London, BS 1637.

643. Mendenhall, T.C.: The metric system. Popular Science Monthly, vol. 49, 721-734, October 1896.

644. Mendenhall, T.C.: United States fundamental standards of length and mass. Science, vol. 56, 377-380, 6 October 1922.

645. Mentink, J.R.; Milek, J.T.; Kremheller, A.: Comments on metric system adoption (Insulation forum). Insulation, 15-18, March 1965.

646. Meter vs. inch: cold war continues. Steel, vol. 155, 94-99, 2 November 1964. Also, Management Review, vol. 53, 57-60, December 1964.

647. Metric and other systems in Chili. Commerce Report No. 50, p. 804, 1 March 1917.

648. Metric Association Inc.: Metric units of measure. The Metric Association, Waukegan, Illinois, 10pp, 7th edition, 1967.

649. Metric Association Inc.: Metric weights and measures. Waukegan, Illinois, The Association, 4th edition, 1944.

650. Metrication; preparing for the change. Engineering (British), vol. 203, 721, 5 May 1967.

651. Metric attack on industry. Industrial Management, vol. 59, 425-426, May 1920.

652. Metric change – northern engineers discuss implications. BSI News, British Standards Institution, London, April 1966.

653. Metric changeover – golden opportunity for British industry. BSI News, British Standards Institution, London, May 1966.

654. Metric changeover in India. Standards Engineering, vol. 15, 5, January 1963.

655. Metric changeover. London Times, Education Supplement, vol. 2611, 1772, 4 June 1965.

656. Metric change – questionnaire for the construction industry. BSI News, British Standards Institution, London, April 1966.

657. Metric chaos in daily life. Iron Age, vol. 105, 679, 4 March 1920; American Machinist, vol. 52, 917, 22 April 1920.

658. Metric compulsion. Power Plant Engineering, vol. 24, 543, 15 May 1920; Also, Literary Digest, vol. 65, 29-40, 5 June 1920.

659. Metric controversy continues. Machine Design, vol. 33, 14-16, 2 February 1961.

660. Metric conversion factors. Automobile Engineering (Extra No.), vol. 55, 260, 14 May 1965.

661. Metric conversion factors. Automobile Engineer, vol. 54, 267, June 1964.

662. Metric conversion petition to Congress by the American Institute of Nutrition. Science, vol. 148, 1670, 25 June 1965.

663. Metric conversion reference. U.S. Dept. of Commerce, Washington, NBS Handbook 102.

664. Metric conversion study bill spurs ASA's decimal inch drive. Metal-working News, 25 February 1963.

665. Metric conversion study. Electro-Technology, p. 14, October 1965.

666. The metric debate. Product Engineering, vol. 33, 78-83, 14 May 1962.

667. Metric debate continues. (Timken Company Survey). Steel, vol. 150, 45-47, 5 February 1962.

668. Metric-English system equivalents chart and data sheet. Power, vol. 89, 417, June 1945.

669. Metric/inch agreement reached for involute spline specifications. Quality Assurance, p. 6, April 1965.

670. Metricisation. Aeronautics (British), vol. 29, 21, January 1954.

671. Metricized lifting tackle. BSI News, British Standards Institution, London, April 1966.

672. Metric lawful in U.S. since 1866. Metalworking News, 28 September 1964.

673. Metric matter in congressional hopper. Civil Engineering/in the Nation's Capitol, vol. 9, 2, September 1963.

674. Metric measure conversion table for everyday use. Publications Division, Ministry of Information & Broadcasting, Delhi, India.

675. Metric measures. Journal of Weights and Measures, India Government, New Delhi, vol. 7, no. 2 1964.

676. Metric measure urged in Britain. New York Times, p. 24, 9 November 1958.

677. Metric medicine. New York Times, February 1944.

678. Metric missile: maverick. Science News, vol. 92, 320, 30 September 1967.

679. Metric move to double U.K. standards group. Chemical & Engineering News, vol. 43, 21, 31 May 1965.

680. Metric myth. Literary Digest, vol. 54, 1056-1057, 14 April 1917.

681. Metric one step nearer in building. Engineering, vol 201, 534, 18 March 1966.

682. Metric practice guide revised. Materials Research & Standards, vol. 6, 408, August 1966.

683. Metric priorities – BSI meeting in Birmingham. BSI News, British Standards Institution, London, August 1966.

684. Metric Questionnaire for engineering industry. Chemical & Industry, p. 719, 6 May 1967.

685. The Metric roadblock. Industrial Research Magazine, vol. 8, 19, October 1966.

686. Metrics; plan for builders; the long haul (engineering industries). Economist (British), vol. 222,750, 25 February 1967.

687. Metric standards for engineering. BS Handbook no. 18, British Standards Institution, London, 1966.

688. Metric survey results. Design News, vol. 20, 3, 3 March 1965.

689. Metric switchover triggers a brawl. Chemical Week, vol. 80, 48, 26 January 1957.

690. Metric system. Journal of Industrial & Engineering Chemistry, vol. 14, 421, May 1922.

691. Metric system. Scientific American, vol. 88, 370, 16 May 1903.

692. Metric system. Science, vol. 131, 565-566, 19 February 1960.

693. Metric system adopted by Lilly in all dealings. Oil, Paint & Drug Reporter, vol. 171, 3, 14 January 1957; Chemical & Engineering News, vol. 35, 38, 28 January 1957.

694. The metric system again! Electro-Technology, vol. 70, 79, September 1962.

695. Metric system and its employment in aviation. Aeronautics (British), vol. 31, 70-73, September 1954.

696. Metric system and the average man. Industrial Engineering, vol. 13, 370, September 1913.

697. The metric system and the Department of Defense. SAE Paper 61-287D.

698. Metric system and the lumber industry in South America. American Machinist, vol. 53, 1068h, 2 December 1920.

699. The metric system and the standardization of engineering mensuration. Aeronautics (British), vol. 33, 64-66, January 1956.

700. Metric system and the U. S. Supervision, vol 27, 12, October 1965.

701. Metric system and world economy. Magazine of Standards, vol. 33, 146, 1962.

702. Metric system and world trade. Nature, vol. 107, 417-419, 2 June 1921.

703. Metric system a necessity in Latin American trade. Commerce Reports, No. 93, 473-477, 21 April 1919.

704. Metric system; British association views for and against its adoption. Electrician, vol. 141, 863-864, 17 September 1948.

705. Metric system change difficult but advantageous. Industrial Research, 131-135, September 1966.

706. Metric system coming closer? Electronic Design, p. 14, 1 March 1966.

707. The metric system committee report. South African Standards Bulletin, 254-255, June 1965.

708. Metric system could help Europe surpass the United States. Industrial Research, p. 135, October 1966.

709. Metric system conversion deserves study. The Western Engineer, p. 7, September 1963.

710. Metric system conversion faces custom as big hurdle. Oil, Paint & Drug Reporter, vol. 171, 5, 4 February 1957; Chemical & Engineering News, vol. 35, 38, 11 February 1957.

711. Metric system discussion. Mechanical Engineering, vol. 85, 86-88, February 1963.

712. The metric system exclusively. Southern Pharmaceutical Journal, January 1944.

713. Metric system favored. Iron Age, vol. 108, 1010, 21 October 1921.

714. Metric system for Britain. New York Times, May 25, 1965.

715. The metric system for us. AIA (American Institute of Architects) Journal, p. 249, November 1945.

716. Metric system in export trade; report of committee on weights and measures. SAME Journal, vol. 40, 756-66, American Society of Mechanical Engineers, N. Y., September 1918.

717. Metric system hearings, 89th Congress, 1st session on H. R. 2626, superseded by H. R. 10329, 133 pp, 2-9 August 1965.

718. The metric system: Hearings before subcommittee no. 1 and the committee on science and astronautics, U. S. House of Representatives, 87th Congress, 1st session on metric study Bills 269 & 2049, 28-29 June and 21 July, U. S. Government Printing Office, Washington, 1961.

719. The metric system; how soon? Feed Management, p. 34, May 1967.

720. Metric system in effect in Japan--at last. Product Engineering, vol. 30, 22, 27 April 1959.

721. Metric system in Great Britain. Commerce Report no. 18, 439-443, 22 January 1920.

722. Metric system in Japan. Science, vol. 54, 23-24, 8 July 1921.

723. Metric system in Japan. Industrial Management, vol. 62, 90, 1 August 1921.

724. Metric system in the textile industry. Scientific American, vol. 87, 19, 12 July 1902.

725. The metric system in the United Kingdom; the use of SI units. British Standards Institution, London, PD 5686, December 1965.

726. Metric system, new rule for Britannia. Product Engineering, vol. 36, 46-48, 21 June 1965.

727. Metric system not wanted in British optical industry. American Machinist, vol. 53, 1162, 16 December 1920.

728. Metric system of measurement. Science, vol. 140, 1137-1138, 7 June 1963.

729. The metric system of measurement; with units and definitions, conversion tables, 46" x 29" wall chart. NBS Misc. Publication No. M232, U. S. Government Printing Office, Washington, 1961.

730. Metric system on horizon for British currency, weights. Product Engineering, 17, 13 March 1961.

731. Metric system or MKSA—readers give standing ovation to idea. Electronic Design, 52-58, 4 January 1966.

732. Metric system preferred. New York Times, p. 5, col. 1, 7 May 1959.

733. Metric system proposed. Science News Letter, 15 July 1961.

734. Metric system, should we convert? Mechanical Engineering, vol 84, 41-47, July 1962; Discussion: vol. 86, 86-88, February 1963.

735. The metric system (sounding board letters). Design News, 5 August 1964.

736. Metric system study not dead. Chemical & Engineering News, vol. 44, 19, 12 September 1966.

737. The metric system vs. the English system. SPE (Society of Plastics Engineers) Journal, p. 713, August 1961.

738. Metric system, what it means to oil marketers. National Petroleum News, vol. 58, 126-127. June 1966.

739. Metric system! why? Concrete, vol. 14, 246-247, June 1919.

740. The metric system; why not now? AIA (American Institute of Architects) Journal, p. 131, September 1945.

741. Metric threads. English Mechanic and World of Science, vol. 109, 172, 2 May 1919.

742. Metric turtle. Industrial Research, vol. 8, 24, May 1967.

743. Metric units. Automobile Engineering, vol. 56, 94-95, March 1966.

744. Metric units and equivalents. Electrical World, vol. 122, 122, 17 February 1945; vol. 123, 108, 3 February 1945.

745. Metric units of measure. Metric Association, Inc., Waukegan, Illinois, 7th edition, 11 pp, 1967.

746. Metric units to unite the world. American Industries, vol. 20, 22-25, May 1920.

747. Metric usage. Science, vol. 129, 470-471, 20 February 1959.

748. Metric vs. English system; points in favor and opposed to metric bill. Engineering and Contracting, vol. 56, 426-427, 2 November 1921.

749. Metric vs. inch at industrial fasteners institute meeting. Product Engineering, vol. 35, 71-72, 3 August 1964.

750. The metric vs. the English system of weights and measures. National Industrial Conference Board, Research Report No. 42, October 1921.

751. Meyer, Joseph: Where does the metric system prevail? (letter). Science, vol. 150, p. 435, 22 October 1965.

752. Michelson, A. A.; J. R. Benoit: Trav. et mem. du BIPM, vol. 11, 3, 85, 1895.

753. Milek, John T.; Valerie Antoine: Can the U.S. afford not to adopt the metric system? Standards Engineering, vol. 20, no. 3, June/July 1968.

754. Miles out. Aeronautics (British), vol. 30, 35, March 1954.

755. Miller, F.J.: Metric system and the maintenance of standards. Franklin Institute Journal, vol. 185, 443-444, March 1918.

756. Miller, Fred J.: Metric system of weights and measures. Science, vol. 37, 941-942, 20 June 1913.

757. Miller, George P.: Pathway of early U.S. history proves unfortunate hindrance. Metalworking News, 28 September 1964.

758. Miller, Kelly: Scales of denominate units. Education, vol. 22, 468-476, April 1902.

759. Miller, Theodore H.: Metric system in an American shop. Machinery, vol. 26, 1128-1129, August 1920.

760. Misch, H.L.: Ford lays groundwork for metric system. Steel, vol. 159, 117-118, 10 October 1966.

761. Misch, H.L.: Metric system. Ford Motor Company Executive Communication, February 1966.

762. Mitchell, P.D.: How Beloit (Wis.) adopted decimal inch. Standards Engineering, vol. 16, 4-5, December 1964.

763. The MKS or Giorgi system symposium. Proceedings Institute Electrical Engineers, vol. 97, 235, 1950.

764. The MKS system of electrical and magnetic units. British Standards Institution (Memorandum), London, vol. 1637, 1-10, 1950.

765. MKS units for school physics? Institute of Electrical Engineers Journal, vol. 2, 152-155, 15 March 1956.

766. Molesworth, G.: Metric tables. Barnes & Noble (7th edition by E.J. Molesworth), 1951.

767. Molitor, David A.: Metric system of weights and measures. Engineering Institute of Canada Journal, vol. 4, 569-572, November 1921.

768. Molitor, David A.: The metric system of weights and measures. Michigan Architect & Engineer, January-February 1922.

769. Moores, George: Inch versus the meter. Cassier's Magazine, vol. 27, 157-160, December 1904.

770. More about metric threads. Engineering, vol. 201, 124, 21 January 1966.

771. More on metric survey. Design News, vol. 20, 3, 31 March 1965.

772. Moreau, H.: Genesis of metric system and work of international bureau of weights & measures. Chemistry Education, January 1953.

773. More metric system. Mechanical Engineering, p. 81, May 1964.

774. Mosthaf, E. F.: Origin of the metric system as length measurement. Machinery, vol. 55, 212, June 1949.

775. Moving into metric. Chemical Week, vol. 80, 55-56, 16 March 1957.

776. Mowbray, Melton: Preparing for metrication, a PERA symposium and exhibition. Production Engineering Research Assn. of Great Britain, 64 pp, 19-20 April 1967.

777. Mroz, E. A. J.: Metric terminology (letter). Chemical & Engineering News, p. 4, 10 February 1964.

778. Mummert, E. S.: Alternative for the metric system. Scientific American, vol. 121, 57, 19 July 1919. Discussion: vol. 121, 205, 30 August 1919; vol. 121, 281, 20 September 1919; vol. 122, 111, 31 January 1920.

779. Mummert, E. S.: Word with the editor. Iron Trade Review, vol. 65, 169-170, 17 July 1919.

780. Muschamp, G. M.: Is United States evolution to metric system desirable. SAE Paper 660304, presented at SAE 1966 meeting, 8 pp, 25-28 April 1966.

781. Mykelstad, N. O.: Which metric system? Products Engineering, 28-29, 24 October 1960.

782. Nason, R.: Should we abolish the inch. Duns Review & Modern Industry, vol. 82, 35-36, September 1963; Management Review, vol. 52, 25-28, October 1963.

783. National Aeronautics and Space Administration, Marshall Space Flight Center: The change from pound and pound-force to kilogram and newton; Direct conversion of the English-American, non-metric technical units into the international system of units (SI). Translation into English from DIN-Mitt. (Berlin), vol. 44, no. 12, 624-644, 1965; NASA-TM-X-5907, RSIC-551, 79 pp, 13 May 1966.

784. National council of United States chamber votes against metric system. American Machinist, vol. 60, 752c, 15 May 1924.

785. National Industrial Conference Board: Metric vs. the English system of weights and measures. Research Report No. 42, 261 pp, October 1921.

786. National Industrial Conference Board: Weights and measures in the United States. 30 pp, 1920.

787. NATO standardization on meters. Standards Engineering, vol. 9, 13, August-September 1957.

788. Nautical miles unmasked. Aeronautics (British), vol. 29, 157, September 1953.

789. NBS adopts international system of units. Instruments & Control Systems, p. 131, April 1964.

790. NBS adopts international system of units. U.S. Dept. of Commerce, Washington, NBS Technical News Bulletin, vol. 48, 61, April 1964.

791. Nelson, Jean W.: Cost of conversion to the metric system. Paper presented at 14th annual meeting, Standards Engineers Society, Toronto, 12 pp, 15-17 September 1965.

792. Nelson, Jean W.; H.H. Woodworth, Jr.: The U.S. and the metric system. Stanford Research Institute, January 1963.

793. Neslo, D.: Heresy in the hinterland. Journal of Industrial Arts Education, 37-39, September 1966.

794. Neuberger, Maurine B. (Senator, of Oregon): Unpublished statement concerned with S. 387, to Subcommittee on Antitrust and Monopoly Senate Committee on the Judiciary, 4 pp, 25 April 1963.

795. Neville, Harvey A.: Educating the public in the use of the metric system. Journal of Chemical Education, vol. 2, 593-599, 600-604, July 1925.

796. Newell, R.R.: Conversions. Science, vol. 132, 843-849, 23 September 1960.

797. Newkirk, Burt L.: Metric system in electrical industry. Electrical World, vol. 81, 1117-1118, 12 May 1923.

798. Newkirk, Burt L.: The metric system in the electrical industry. Applied Optics, vol. 5, 1253-1255, August 1966.

799. New rule for Britannia. Product Engineering, vol. 36, 46-48, 21 June 1965.

800. New Standard for meter. Business Week, vol. 19, 178, 19 November 1960.

801. New units in the metric system legally adopted in France. Scientific American Monthly, vol. 2, 152, October 1920.

802. New values for the physical constants. U. S. Dept. of Commerce, Washington, NBS Technical News Bulletin, vol. 47, 175, October 1963.

803. Next step for the metric system. Product Engineering, vol. 31, 46, 15 August 1960.

804. Nickols, L. W.: Conversion of inch and metric sizes on engineering drawings. Engineer, vol. 199, 409-411, 25 March 1955; Engineering, vol. 179, 409-411, 1 April 1955.

805. 94 percent favor conversion to metric units of measurement. Industrial Research, vol. 9, 119, January 1967.

806. 93 percent of ocean scientists, engineers favor conversion to metric system. Oceanology International, p. 43, January-February 1967.

807. Notes on conversion to the metric system. Report of the Committee on Science & Astronautics, Washington.

808. NSF, metric bills advance. Science News, vol. 91, 208, 4 March 1967.

809. Oesper, R. E.: Genesis of the metric system and the work of the international bureau of weights and measures. Journal of Chemical Education, vol. 30, 3-20, January 1953.

810. Oft-proposed study of U. S. adoption of the metric system is dead for this season (Washington report). Products Engineering, p. 11, 26 September 1966.

811. Olympic yardstick. Design News, vol. 19, 102, 30 September 1964.

812. On the metric system. SPE Transactions, Society of Plastics Engineers, vol. 3, 98, April 1963.

813. Open letter to the world trade club; others who are against a compulsory metric law. American Machinist, vol. 52, 631-634, 18 March 1920.

814. Original standard system offers decimalized measurement. Product Engineering, vol. 35, 82-85, 20 July 1964.

815. Origin of the metric system of length measurement. Machinery, vol. 55, 212, June 1949.

816. Our antiquated measuring system. Industrial Research, vol. 4, 5, November 1962.

817. Our baffling weights and measures. Science Digest, vol. 48, 63-68, January 1958.

818. The outlook for metric thread screws and nuts. Mass Production, 69-70, July 1966.

819. Outspoken critic holds conversion cost prohibitive. Metalworking News, 28 September 1964.

820. Pakistan to switch to metric system of weights in December; measures will be changed later. New York Times, p. 9, 23 June 1966.

821. Palmer, James F.: The international system of units handbook. Brown Engineering Co., Inc. Huntsville, Alabama, 1-27, 1965.

822. Palmer, J.F.: SI metric units, now! Industrial Research, vol. 10, 70-74, February 1968.

823. Pan American conference on uniformity of specifications, first meeting, 1924-1925, Lima, Peru. Bulletin of the Pan American Union, vol. 59, 241-246, 1925.

824. Parker, William: International Harvester wants metric, urges study now. American Metal Market, 26 January 1967.

825. Parker, William: World-wide sales lure turns Ford's choice to metric system. American Metal Market, 24 January 1967.

826. Partial use of decimal system thirty-five years after legalization. Scientific American Supplement, vol. 53, 21875-21876, 1 March 1902.

827. Peabody, C. H.: Meters and inches. International Marine Engineering, vol. 25, 483, June 1920.

828. Peck, E. C.: Metric system assailed as favoring minority. American Machinist, vol. 56, 84b, 12 January 1922.

829. Pederson, O. A.: Steel bar weights in metric units. Civil Engineering, vol. 37, 82, January 1967.

830. Pell, Senator Claiborne: Feasibility probe vital prequisites. Metalworking News, 28 September 1964.

831. Perard, A.: The metric system and its employment in aviation. Aeronautics, vol. 31, 70-73, September 1954.

832. Perot, Alfred: Decimal metric system. Typographie Plon-Mourrit et Cie, 8 Rue Baranciere, Paris, 12pp, 1915.

833. Perry, John: The story of standards. Funk and Wagnalls, N. Y., 271pp, 1955.

834. Perutz, Tino: Will NATO tank open door to metric system? Steel, the Metalworking Weekly, vol. 156, 1 June 1964.

835. Peterson, C.: All is not sweetness and light in the realm of miniature screws. Assembly Engineering, 42-44, March 1965.

836. Phelps, F. M.: Airy points of a meter bar. American Journal of Physics, vol. 34, 419-422, May 1966.

837. Phelps, F. M.: Elongation of a meter bar hanging in a gravitational field. American Journal of Physics, vol. 35, 157, February 1967.

838. Phillips, E. A. W.: British trade and the metric system. Concrete Institute Transactions & Notes, vol. 9, 1-15, 24 January 1918.

839. Plain facts numerous and incontrovertible, showing why any compulsory metric system bill is arbitrary, needless, confusing, dangerous. The National Assn. of Manufacturers, N. Y., 43pp, 1904.

840. Policy statement on metric system. Mechanical Engineering, vol. 87, 113, January 1965.

841. Polk, Louis: Inch vs millimeter. Ordnance, vol 50, 296-299, November-December 1965.

842. Polk, Louis F.: Matters related to common systems of measurement (LaQue Report). Panel on Engineering & Commodity Standards, Task Force Department of Commerce, 13pp, 10 June 1964.

843. Polk, Louis F.: Men's minds and the measurement systems. 21st Annual ISA Conference, N. Y., 9pp, 24-27 October 1966.

844. Polk, L. F.: Metric system not a problem, it is a challenge. Automation, vol. 13, 9, December 1966.

845. Pope, Frederick A.: Some experience with the metric system. American Machinist, vol. 52, 1298-1299, 17 June 1920.

846. Porter, L. C.: What are a pound and a yard? Engineering, vol. 180, 718, 25 November 1955.

847. Porter, Sylvia: How metric system would affect us. Evening Star, Washington, 24 December 1963.

848. Porter, Sylvia: Metric system; costly change. Evening Star, Washington, 26 December 1963.

849. Position of the metric system. Nature, vol. 79, 501, 25 February 1909.

850. Potts, D. H.: Metric conversion table. Track & Field News, June 1963.

851. Powell, H. S.: Freedom to measure yards or meters? Engineering, vol. 171, 744-746, 22 June 1951.

852. Practical application of the metric system. Machinery, vol. 22, 585, March 1916.

853. Pray, R. H.: Metric system is simple! Arithmetic Teacher, vol. 8, 179, April 1961.

854. Precise conversion of inch and metric sizes on engineering drawings. British Standards Institution, British Standards House, London, 1957.

855. Preparing for metrication, PERA symposium and exhibition. Production Engineering Research Assn. of Great Britain, 64pp, April 1967.

856. Present status of metric system in the United States. Science, vol. 59, 528-529, 13 June 1924.

857. Present system regarding the use of the metric system in the U.S. The U.S. Dept of Commerce, NBS Office of Weights and measures, Washington, 1965.

858. Prichard, Dean: Both measures are in use by Scandinavians. Metalworking News, 28 September 1964.

859. Programme for the change to the metric system in the construction industry. British Standards Institution, London, PD 6030, February 1967.

860. Progressive shift seen cutting costs. Metalworking News, 28 September 1964.

861. Progress reported in international motor standards. Electrical Manufacturing, vol. 58, 152-153, 292, November 1956.

862. Progress report of the committee for the study of the metric system in the U.S. Transactions, American Geophysical Union, vol. 40, no. 3, September 1959.

863. Providing for survey to determine practicability of adopting metric system of weights and measures. Report from Committee on Science and Astronautics, to accompany H.R. 2049, 6pp, 25 July 1961.

864. Push for change to metric system. Public Utilities, vol. 74, 61-62, 24 September 1964.

865. Puttock, M. J.: Notes on engineering metrology. Brooks Publishing.

866. Rand, A.: Why not go metric? Industrial Canada, vol. 62, 32-34, June 1961.

867. Rao, V. V. L.: A guide to the metric system. Asia Publishing House, N. Y., 64pp, 1961.

868. Rapp, Mack: Pros and cons on the adoption and acceptance of metric system in the U. S. California Association of Weights & Measures Officials, San Diego, Calif., 9pp, 12 September 1962.

869. Rappaport, S.: English measurement system costs time and accuracy when applied to arithmetic in engineering. Aero Digest, vol. 70, no. 6, 46-48, June 1955.

870. Raser, William: Trade unhampered in France. Metalworking News, 28 September 1964.

871. Ratcliff, J. D.: Let's go metric. This Week Magazine, 16 April 1944.

872. Rathbun, J. B.: Oil and metric system. Petroleum Age, vol. 15, 52+, 15 May 1925.

873. Raviolo, V.: Conversion in terms of cost and utility. Paper in Standardization—Keystone of Industrial Progress, American Standards Assn. proceedings, 10th National Conference on Standards, 10-11, 1959.

874. Read, C. B.: Arguments against universal adoption of the metric system. School Science & Mathematics, vol. 50, 297-306, April 1950. Reply by C. J. Arnold, vol. 51, 310-315, April 1951.

875. Readers vote yes on metric system. Metal Progress, vol. 77, 134-140, January 1960.

876. Recent progress of the metric system. An appendix to the report presented by the 10th General Conference on Weights & Measures, International Bureau of Weights and Measures, Paris, 1955.

877. Recent progress of the metric system. Nature, vol. 77, 611-612, 30 April 1908.

878. Recommendations for the coordination of dimensions in building, basic sizes for building components and assemblies. British Standards Institution, London, BS 4011, 8pp, 1966.

879. Redfield, William C.: Message from the Secretary of Commerce of the United States of America. American Metric Association, N.Y., 19pp. 1919.

880. Relation of the metric system to the triumph of German over Anglo-Saxon efficiency. Current Opinion, vol. 60, 186, March 1916.

881. Report of debate on the metric system; House of Representatives, Australia. Decimal Association, London, 19pp, 4 August 1910.

882. Report of 40th national conference on weights and measures, 1955. U.S. Dept. of Commerce, National Bureau of Standards, Washington, Misc Publication no. 216, 143pp, 30 September 1955.

883. Report of the Cleveland chamber of commerce on the metric system. American Machinist, vol. 53, 283-287, 5 August 1920.

884. Report of the 47th national conference of weights & measures. Natl Bureau of Standards, U.S. Dept. of Commerce, Washington, Misc. Publ. No. 244, 23 November 1962.

885. Report of the metric study task force. National Bureau of Standards, U.S. Dept. of Commerce, Washington, 16 March 1961.

886. Report of the panel on engineering and commodity standards of the commerce technical advisory board. U.S. Dept. of Commerce, Washington, PB 166811, 2 February 1965.

887. Report of the special committee on metric weights and measures. Oil, Paint & Drug Reporter, vol. 100, 17, 4 October 1921; vol. 104, 25, 17 October 1923.

888. Report of the special committee on the status of the metric system in the United States. American Society of Civil Engineers, proceedings, vol. 34, 415032, October 1908.

889. Report on metric-inch debate. Tooling & production, September 1964.

890. Report on the metric system. Metal Progress, vol. 77, 69-70, January 1960.

891. Report on the metric system. Scientific American Supplement, vol. 53, 22036-22038, 10 May 1902.

892. Reports on the metric system, Franklin Institute, Philadelphia. 1834, 1876, 1887, 1902.

893. Reprint of the metric study task force. U.S. Dept. of Commerce, Washington, 8pp, 16 March 1961.

894. Richards, Jr., Howard: Meters, liters and grams for the allies. New France, vol. 3, 426-428, March 1919.

895. Richards, Howard: Metric campaign. Science, vol. 55, 515-516, 12 May 1922.

896. Richards, Howard: Practical application of metric system. Metal Worker, vol. 92, 42, 11 July 1919.

897. Richards, Howard: Progress in metric system introduction. Engineering and Contracting (Water Works), vol. 62, 605-606, 10 September 1924.

898. Richards, Howard: Why it should be done the metric way. Mining and Metallurgy, vol. 173, 13-14, May 1921.

899. Riordan, J. J.: Metric system and Department of Defense. SAE Paper No. 287D, 9pp, 9-13, January 1961.

900. Roesch, E.: Contra metric system. Mechanical Engineering, vol. 86, 77-78, October 1964; Discussion: vol. 87, 88-89, March 1965.

901. The role of research in educational progress. American Educational Research Association Report, Washington, 1937.

902. Roman, T. P.: Decimal coinage backed in Britain. New York Times, p. 7, col. 1, 6 May 1960.

903. Rosenberg, S. J.: Stainless steel for standard weights. Materials Research & Standards, vol. 1, 21-22, January 1961.

904. Roth, Norman H.: The desirability and practicability of adoption of the metric system in the U. S. Industrial College of the Armed Forces, Thesis no. 137, 13 March 1964.

905. Rowell, H. S.: Freedom to measure yards or meters? Engineering, vol. 171, 744-746, 22 June 1951.

906. Rowell, H. S.: So-called metric system. Engineering, vol. 166, 359-360, 8 October 1948.

907. Rucker, I. P.: Metric system in junior high school. Math Teacher, vol. 51, 621-623, December 1958.

908. Runge, Sir Peter (President of the Federation of British Industries): The metric system and industry. A letter calling for the British government to express its support for adoption of the metric system. 17 February 1965.

909. Russians stick to red line. Science News Letter, vol. 67, 78, 20 January 1955.

910. Ruth, Smedley B.: Is metric in your future? The Electronic Engineer, vol. 26, 31-33, April 1967.

911. Saliby, Andrew: Inch-metric dimensioning. Mechanical Engineering, vol 88, 50-52, January 1966.

912. Saliby, Andrew: Meeting the metric problem. Engineering Digest, vol. 12, 54-56, October 1966.

913. Sang, Alfred: Metric system. Scientific American, vol. 94, 454-455, 2 June 1906.

914. Sá, Paulo: The regime of weights and measures in Brazil. Magazine of Standards, vol. 35, 39-40, February 1954.

915. Sauers, C. V.; D. R. Winslow: Ideas to stimulate lessons in measurement. School Science & Mathematics, vol. 66, 532-534.

916. SAWE recommends metric system. Standards Engineering, vol. 9, 4, August-September 1957.

917. Scales for use with decimal-inch dimensioning. American Standards Assn., Standard Z75. 101955, 26 September 1955.

918. Schlessinger, P. E. and B. M. Kennedy: Metric measurements in food preparation. Journal of Home Economics, vol. 59, 120-123, February 1967.

919. Schmidt, A. M.: How Japan went metric. Measurements & Data, vol. 1, 124-128, March-April 1967.

920. Schmidt, A. M.: Implementation of the metric system in Japan. Paper presented at 21st Annual ISA Conference, N. Y. 5 pp, 24-27 October 1966.

921. Schmidt, Walter K.: Problems of the finishing room. Furniture Manufacturer and Artisan, vol. 73, 252-254, December 1916.

922. Schubiger, A. E.; Baer, J. E.: Metric system; small quid for a large quo. Sciences, vol. 143, 638-639, 14 February 1964.

923. Science and technology for development (report of the UN conference on the application of science and technology for the benefit of less developed areas). United Nations, N. Y., vol. I to VIII, 1963.

924. Scientific England and the metric system; cost of changing to the metric system. Industrial Management, vol. 61, 154 & 202, 1 March 1921.

925. Scientists [illegible] atomic age standards. Science Digest, vol. 49, 75, February 1961.

926. Screw threads, metric first choice for British industry. BSI News, vol. 10, 1, 4 & 5.

927. Segman: Pounds or grams. Science News Letter, vol. 76, 106-107, 15 August 1959.

928. Sellers, Coleman: Metric system; is it wise to introduce it into British and American machine shops? (from an American point of view). Cassier's Magazine, vol. 17, 365-377, March 1900.

929. Sellers Jr., Coleman: Obstacles to metric system. Iron Age, vol. 98, 1045-1046, 2 November 1916.

930. Serchuk, A.: 100 percent use of metric system is debated. Electronic News, vol. 11, 44, 21 November 1966.

931. Services wise, metricise. Aeronautics, vol. 36, 25, July 1957.

932. Several U. S. agencies watch metric-English system issue. Metalworking News, 28 September 1964.

933. Shall we? When? how? Standard Engineering, vol. 15, 4-10, December 1962.

934. Shaw, Napier: Units and unity. Nature, vol. 101, 326-328, 27 July 1918. Discussion: vol. 102, 153-154, 24 October 1918.

935. Sherman, Samuel M.: Origin of metric prefixes. IEEE Spectrum, vol. 3, 162, August 1966.

936. Shift to metric no shock to Britons. Engineering News, vol. 174, 18-19, 3 June 1965.

937. Shirov, K. P.: Development of the metric system of measures and ways of transition in the USSR to the international system of units. Measurement Tech., no. 4, 294, April 1964.

938. Should American industry convert to the metric system? ASA Conference on Standards, Detroit, 15 pp, October 1959.

939. Should American industry convert to the metric system? panel discussion. Magazine of standards, vol. 30, 369-371, December 1959.

940. Should Britain go metric? Steel Review (British), 47-48, April 1960.

941. Should the U. S. adopt the metric system? Business Week, no. 2004, 73-74, 27 January 1968.

942. Should the U. S. adopt the metric system? points of view. Product Engineering vol. 30, 30-31, 23 March 1959.

943. Should the U. S. go metric? Product Engineering, vol. 32, 68-69, 2 October 1961; Discussion: vol. 33, 79-83, 14 May 1962.

944. Should the U. S. go metric? pro and con discussion. Senior Scholastic, vol. 87, 18-19, 28 October 1965.

945. Should U. S. industry go metric? News Front, 34-36, September 1962.

946. Should we abolish the inch? Duns Review and Modern Industry, 35-36, September 1963.

947. Should we all go metric? Americas, vol. 6, 3-5, October 1954.

948. Should we go to the metric system? Metal Progress, vol. 76, 65-66, August 1959. Discussion: vol. 77, 134, January 1960.

949. Should we go to the metric system? Space/Aeronautics, vol. 31, 38, May 1959.

950. Siemens, Alexander: Bradford and the metric system. Decimal Association, London, 19 pp, 1913.

951. Siemens, Alexander: Metric system. Scientific American Supplement, vol. 78, 6, 4 July 1914.

952. Silsbee, F. B.: Systems of electrical units. Journal of Research, U. S. Dept. of Commerce, National Bureau of Standards, Washington, NBS Monograph no. 56, vol. 66c, no. 2, 1966.

953. Silsbee, F. S.: Does rationalization change units? Electrical Engineering, vol. 76, 296-299, April 1957.

954. Silsbee, R. B.: Extension and dissemination of the electrical and magnetic units by the U. S. National Bureau of Standards, Washington, NBS Circular no. 531, 1952.

955. Simplified production, quality reliability and the metric system. The Times Business News, p. 18, 19 April 1967.

956. Simplifying the metric system. Reclamation Record, vol. 10, 129, March 1919.

957. Sims, E. R.: The metric-English twist. The Ohio Engineer, 12-13, October 1966.

958. SI units in perspective. Journal of Scientific Instruments, vol. 44, 243-244, March 1967.

959. Sizer, H. S.: Machine tools and the inch-meter conversion. Brown & Sharpe Mfg., Co., Providence, R. I.

960. Sliwa, Jan A.: A guide for the use of the metric system in the construction industry. British Standards Institution, PD 6031, 24pp, February 1967.

961. Sliwa, Jan: No mystique about metric. British Standards Institution, London, BSI News, August 1966.

962. Sliwa, Jan: Skill – metric and mystique. Architectural Review (British), 314-318, April 1966.

963. Slossen. E. E.: Decimal numeration in the United States. Science, vol. 4, 59-62, 17 July 1896.

964. Smirnoff, M. V.: Measurements for engineering and other surveys. Prentice-Hall, New York, 1961.

965. Smirnov, Yu: A necessary and sufficient condition for the metricization of a topical space. Doklady Akamemii Nauk SSSR, 7pp, (Air Force Translation No. TT-F-192), February 1964.

966. Smith, A.: Why not meters and kilos? Science Digest, vol. 58, 90-93, November 1965.

967. Smith, Bart A.: Pressure conversion (graph) from English to metric units. Design News, 72-73, 21 June 1967.

968. Smith, R. W.: Federal basis for weights and measures. U. S. Dept. of Commerce, National Bureau of Standards, Washington, Circular No. 593, 23pp, 5 June 1958.

969. Sober realities of metric conversion. Engineering, Vol. 201, 527, 18 March 1966.

970. Society of Automotive Engineers: Metric equivalents of U. S. conventional units of measure. SAE Recommended Practice, SAE-J916, 5pp, 1965.

971. Society of Automotive Engineers: Resolution passed against compulsory adoption of metric system. Society of Automotive Engineers Journal, vol. 7, 155-156, August 1920.

972. Sokol, Louis F.: The goal – a standard unit system. Denver Engineer, vol. 20, 6-9, November 1966.

973. Sokol, Louis F.: The measurements mess. The Air Line Pilot, vol 36, 8-10, April 1967.

974. South African Bureau of Standards: Report of the metric system committee, 20 May 1965.

975. South American plea for metric system. Machinery, vol. 25, 850, May 1919.

976. Specifications for machine screws and machine screw nuts; metric series. British Standards Institution, London, BS 4183, 44pp, 1967.

977. Spector, Leo F.: Let's get the facts straight on the inch vs. metric issue. Assembly Engineering, 28-31, June 1964.

978. Spencer, Herbert: The metric system. Popular Science Monthly, vol. 49, 186-202, June 1896; 410-411, July 1896.

979. Spencer, Herbert: Against the metric system. D. Appleton, N. Y., 29pp, 1906.

980. A standard inch is near adoption. New York Times, p. 52, col. 1, 30 March 1963.

981. Standardization and the metric system. Iron Trade Review, vol. 62, 312-322, 31 January 1918.

982. Standardization in engineering; discordant harmony (inch and metric system). Economist, vol. 213, 452, 26 December 1964.

983. Standardization in the USSR; part 1, the metric system. Magazine of Standards, vol. 33, 232, August 1962.

984. Standarized method of translating inches to millimeters. American Machinist, vol. 56, 710, 11 May 1922.

985. Standards and Calibration. U.S. Dept. of Commerce, Washington, NBS Technical News Bulletin, vol. 47, 30, February 1963.

986. Standards; backtalk from overseas. Product Engineering, vol. 35, 49, 17 August 1964.

987. Standards; inch vs. metric. Product Engineering, vol. 35, 71-72, 3 August 1964.

988. Standards men and the metric change. Engineering, vol. 201, 757-758, 22 April 1966.

989. Standard symbols for units; standard no. 260. IEEE Spectrum, vol. 2, 5-12, January 1965.

990. Staples, Elton E.: Why I favor the metric system. Metal Progress, vol, 87, 93-94, December 1964.

991. Status of the national standards for physical measures. Science, vol. 150, 169-177, 8 October 1965.

992. The sterling area's decimal point. Finance, 33-35, February 1966.

993. Stevens, E. J.: Metric system. Chemical & Engineering News, vol. 38, 5, 3 October 1960.

994. Stevens, W. LeConte: Metric system: shall it be compulsory? Popular Science Monthly, vol. 64, 394-405, March 1904.

995. Stimson, H. F.: Celsius vs. fahrenheit. Science, vol. 136, 254-255, 20 April 1962.

996. Stimson, H. F.: International practical temperature scale of 1948, revised 1960. U. S. Dept. of Commerce, Washington, National Bureau of Standards Monograph 37, 8 September 1961.

997. The Stocksbridge experiment – Yorkshire leads with the metric system. British Standards Institution, London, BSI News, December 1966.

998. Stone, Violet West: On going metric, Pen, 12-13, October 1954.

999. Strain, D. C.: Up-to-date SI units for metric measurements. Instrumentation Technology, vol. 14, 62-64, June 1967.

1000. Strauss, L. L.: Inches, pounds, pints; the case for changing them all. U. S. News, p. 96, 28 June 1965.

1001. Strauss, Lewis L: Timeliness of the metric question. Annual meeting, Metric Association, N. Y., 7pp, 27 December 1960.

1002. Strong, E.: Meaningful metric. School Science & Mathematics, vol. 64, 421-422, May 1964.

1003. Stubbs, A. J.: Case for the adoption of the metric system and decimal coinage. Institute of Electrical Engineers Journal, vol. 56, 129-135, February 1918.

1004. Stubbs, Arthur J.: Metric system for the British empire. Post Office Electrical Engineers' Journal, vol. 11, 1-18, April 1918.

1005. Studies on the metric system proposal. Science, vol 127, 1021-1022, 28 September 1962.

1006. Study of metric system. Report from Committee on Commerce to accompany S. 774, 7pp, 16 September 1965.

1007. Study of the metric system in the U. S. Progress report of Committee for Transactions, American Geophysical Union, 257, 259, 271-272, September 1959.

1008. Stutz, C. C.: Are the South American countries metric? Machinery, vol. 27, 871-872, 21 May 1921.

1009. Stutz, C. C.: Cost of the metric system to the machinist. American Machinist, vol. 54, 735, 28 April 1921.

1010. Stutz, C. C.: English and the metric measuring system; a comparison. American Machinist, vol. 53, 911-913, 916-917, 11 November 1920.

1011. Stutz, C. C.: Metric system applied to the rubber industry. India Ruber World, vol. 62, 481-485, May 1920.

1012. Stutz, C. C.: Tools of our industry; shall we scrap them? Rotarian, vol. 26, 19, June 1925.

1013. Summary of arguments in favor of further adoption of the metric system. U. S. Chamber of Commerce, Washington, 9 February 1922.

1014. Suplee, H. H.: Proposal to force the use of the metric system. Engineering Magazine, vol. 31, 173-178, May 1906.

1015. Swingle, Walter T.: Simple metric conversion table. Scientific American Supplement, vol. 67, 190-191, 20 March 1909.

1016. System-built metric church. Engineering (British), vol. 203, 212, 10 February 1967.

1017. System of tens. Mechanical Engineering, vol. 55, 48-49, July 1962.

1018. Systems: metric vs. the inch. Rubber Age, vol. 98, 77-78, November 1966.

1019. Table converting millimeters to inches; data sheet. Foundry, vol. 84, 239-240, August 1956.

1020. Talmage, Sterling H.: Metric weights and measures. Mining and Scientific Press, vol. 124, 114, 28 January 1922.

1021. Tangerman, E. J.: Engineers discuss the change to metric. Product Engineering, vol. 33, 72-75, 23 July 1962.

1022. Tangerman, E. J.: Shotgun wedding (ref ASME's espousing English measurements). Product Engineering, 16 August 1965.

1023. Teller, Edward: We're losing by inches. This Week Magazine, N. Y., 6-7, 34-35, 15 May 1960.

1024. Thomas, B. W.: The metric system; why not now? Paper presented at 21st Annual ISA Conference, N. Y., 10pp, 24-27, October 1966.

1025. Thomen, J. A.: Modern tower of babel. Journal Engineering Education, vol, 38, 156-158, October 1947.

1026. Thompson, Mrs. M.S.: Shopping with metric. Paper presented at Standards Assn. Section, BSI conference on the change to the metric system in the UK, and its relation to international standards, British Standards Institution, 3pp, 14-15 April 1966.

1027. Thomson, K.: Short conversion tables between English and metric systems of units. Geophysics, vol. 30, 446-449, June 1965.

1028. Thurber, E.A.: ASTM and the metric system. Materials Research & Standards, 854-855, October 1962.

1029. Thurber, E.A.: Britain goes metric. Materials Research and Standards, vol. 7, 72-73, February 1967.

1030. Tidying up the metric system; the cubic decimetre and the litre. British Standards Institution, London, BSI News, November 1965.

1031. Tilton, H.B.: Putting the point across (discussion, decimal angle). Products Engineering, p. 10, 30 January 1967.

1032. Tinker, F.A.: The war of measures. The Kiwanis Magazine, 70-72+ December 1965/January 1966.

1033. Towne, Henry R.: Adoption of the metric system would do untold damage. Industrial Management, vol, 59, 473-474, June 1920.

1034. Towne, Henry R.: Our present weights and measures and the metric system. American Society of Mechanical Engineers Transactions, vol. 28, 845-925, December 1906.

1035. Transactions of meetings of 11th general conference on weights and measures. National Aeronautics & Space Administration, Washington, NASA Technical Translation F-217, 197pp, September 1964.

1036. Tray, C.: Metric and English convenient multipliers. Industrial Arts & Vocational Education, vol. 31, 217, May 1942.

1037. Treaty of the meter; 45th congress. U.S. Government Printing Office, Washington, 20 Stat 709, 28 May 1878.

1038. Trey, F: Der Weg zum MKS System. Oesterreichischer Ingenieur und Architekten Verein Zeitschrift, vol. 102, 283-285, December 1957.

1039. Trowbridge, R.P.: An automotive viewpoint on measurement systems. Paper given before American Assn. for the Advancement of Science, Washington, 30 December 1958.

1040. Trowbridge, R.P.: Industry views the metric system. Metal Progress, vol. 86, 98-101, December 1964.

1041. Trowbridge, R. P.: International screw threads. Fasteners, vol. 17, Summer 1962.

1042. Trowbridge, R. P.: Let industry decide. Mechanical Engineering, vol. 84, 44-45, July 1962.

1043. Trowbridge, R. P.: Measurement systems and SAE. SAE Paper No. 660085, 4pp, for meeting 10-14 January 1966.

1044. Trowbridge, R. P.: Our stake in the English system. Metal Progress, vol. 86, 95-97, December 1964.

1045. Trowbridge, R. P.: Physical standards and units of measurement. SAE Paper No. 287B, 8pp, for meeting 9-13 January 1961.

1046. Trowbridge, R. P.: SAE conversions guide to joint English-metric system use. SAE Journal, vol. 74, 36-38, July 1966.

1047. Trowbridge, R. P.: Says no to metric for entire economy. SAE Journal, vol. 69, 95, June 1961.

1048. Trupp, Philip: Huge cost of changeover seen staying switchover for years. Metalworking News, 28 September 1964.

1049. Turner, R. P.: Handling the metric prefixes. Radio Electronics, vol. 33, 80, July 1962.

1050. Turpin, M. C.: Metric system, attitude of the Westinghouse company. Railway Review, vol. 67, 316-317, 28 August 1920.

1051. Tutten, C. H.: The metric system. American Architect & Building News, vol. 80, 19-21, 18 April 1903.

1052. Twenty-hour days, 200 degree circles. Product Engineering, vol. 31, 46, 15 August 1960.

1053. Uniform weights invoked in Japan. New York Times, p. 27, col. 8, January 1958.

1054. United Kingdom studies change. Magazine of Standards, vol. 33, 284, 1962.

1055. United Nations: World weights and measures. Handbook for statisticians, Statistical Papers Series No. 21, United Nations, New York, 140pp, 1966.

1056. United States and the metric system. Scientific American, vol. 86, 343, 17 May 1902.

1057. Units and standards of measurement employed. National Physical Laboratory, Teddington, Middlesex, England, H.M. Stationery Office, London, 1952.

1058. Units and systems of weights and measures, their origin, development, and present status. U.S. Dept. of Commerce, Washington, NBS Letter Circular 1035, 1960.

1059. Units of length, mass and time. Engineer, vol. 192, 703-704, 30 November 1951.

1960. The units of specific impulse. Space/Aeronautics, vol. 42, 9 August 1964.

1061. Units – starting point for all measurements. Measurements & Data, vol. 1, 66-70, March-April 1967.

1062. Universal inch and pound. Scientific American, vol. 200, 61, March 1959.

1063. U.S. Adoption of the metric system of weights and measures (FAA draft staff study). Federal Aviation Agency, Washington, 11pp, 1966.

1064. U.S. aid urges a standard inch. New York Times, p. 8, col. 1, 17 January 1933.

1065. The U.S. and the metric system. Stanford Research Institute, Long Range Planning Service, Menlo Park, Calif., Report no. 158, 21pp, January 1963.

1066. U.S.A. Standards Institute: Geared for action. The USASI, N.Y. 11pp, 1965.

1067. U.S. Chamber of Commerce: In congressional debate on the metric system and the United States, Chamber of Commerce Legislative Information Service Publication, Here's the Issue, vol. 4, no. 15, 26 July 1965.

1068. U.S. Chamber of Commerce: Statement of the U.S. Chamber of Commerce (submitted to the House Committee on Science & Astronatuics), on H.R. 2626, a bill calling for a study of the practicability of converting to the metric system of measurement. Chamber of Commerce, Legislative Action, Washington, 2 August 1965.

1069. U.S. Congress: Act of Congress, 28 July 1866 gives the U.S. its first and only legal standard of weights and measures, the metric system.

1070. U.S. Congress, House Committee on Coinage, Weights and Measures: Supplemental hearing before the committee in coinage, weights and measures, of the House of Representatives, on the subject of the metric system of weights and measures, held 21 April 1902. U.S. Government Printing Office, Washington, 11pp, 1903.

1071. U.S. Congress, House Committee on Coinage, Weights and Measures: The metric system of weights and measures. U.S. Government Printing Office, Washington, 240pp, 1902.

1072. U.S. Congress, House Committee on Science & Astronautics: The metric system hearings before Subcommittee No. 1 and the Committee on Science and Astronautics, U.S. House of Representatives, 87th Congress, 1st session, on H.R. 269 and H.R. 2049, 28-29 June and 21 July 1961. U.S. Government Printing Office, Washington, 77pp, 1961.

1073. U.S. Defense Department considering use of metric system in developing major weapon system. Military Exporter Reporter, p. 263, 13 July 1967.

1074. U.S. Department of Agriculture: Conversion table, metric ton, quintal, kilogram to pounds. USDA, Washington, 25pp, 1957.

1075. U.S. Department of Agriculture: Foreign weights and measures of agricultural products, with factors for conversion to U.S. and metric units. USDA, Washington, 63pp, 1957.

1076. Use of international system (SI) units. Radio & Electronics Engineer, vol. 32, 61-64, July 1966.

1077. Use of meter as unit of linear measurement in U.S. Army operation. Dept of the Army, Washington, Regulation no. 525-8, 1961

1078. Use of metric system urged in all Americas. New York Times, p. 81, col. 5, 29 September 1957.

1079. Use of metric units of measurement in United States Army weapons. Army Regulation no. 700-75, Dept. of the Army, Washington, 3 October 1962.

1080. The use of SI units. British Standards Institution, London, PD5686, 21pp, April 1967.

1081. Use of the metric system in the United States. Scientific Monthly, vol. 8, 95-96, January 1919.

1082. Use metric system here, Lockheed official urges. Electronic Industries, p. 7, May 1962.

1083. Using the metric system. Independent, vol. 88, 54, 9 October 1916.

1084. U.S. House of Representatives (Committee on Science & Astronautics): House reports on public bills, 90th congress, #33 authorizing secretary of commerce to make a study to determine advantages and disadvantages of increased use of metric system in the United States. Report from Committee on Science & Astronautics, to accompany H.R. 3136, 8pp, 6 March 1967.

1085. U.S. House of Representatives (Committee on Science & Astronautics): House reports on public bills, 87th congress providing for survey to determine practicability of adopting metric system of weights and measures. Report from Committee on Science & Astronautics, to accompany H.R. 2049, 6pp, 25 July 1961.

1086. U.S. House of Representatives (Committee on Science & Astronautics): The metric study bill. Hearings before the Committee on Science & Astronautics, U.S. House of Representatives, 89th Congress, 2nd session on S. 774, 8pp, 18 January 1966.

1087. U.S. House of Representatives (Committee on Science & Astronautics): Notes on conversion to the metric system. Report of the Committee on Science & Astronautics, U.S. House of Representatives, 89th Congress, 1st session 48pp, 18 July 1965.

1088. U.S./metric micrometer for uses of both systems (new products section). Plastics Design & Processing, p. 6, September 1966.

1089. U.S. metric use hotly opposed in auto circles; some for it. Metalworking News, 28 September 1964.

1090. U.S. National Bureau of Standards: The Federal basis for weights and measures. U.S. Dept. of Commerce, Washington, NBS Circular no. 593, 5 June 1958.

1091. U.S. National Bureau of Standards: International metric system of weights and measures. U.S. Dept. of Commerce, Washington, NBS Misc. Publications, vol. 2, 1-16, 21 September 1922.

1092. U.S. National Bureau of Standards: Metric system in export trade. Report to the International High Commission, by Samuel W. Stratton. United States, 64th Congress 1st session, Senate Document 241, 80pp, 1916.

1093. U.S. National Bureau of Standards: Tables of equivalents of the United States customary and metric weights and measures. U.S. Government Printing Office, Washington, 46pp, 1913.

1094. U.S. National Bureau of Standards: Units and systems of weights and measures; their origin, development, and present status. U.S. Dept. of Commerce, Washington, NBS Letter Circular No. LC-1035, 38pp, January 1960.

1095. U.S. National Bureau of Standards: Units of weight and measure (U.S. customary and metric); definitions and tables of equivalents. NBS Miscellaneous Publication No. 241, U.S. Government Printing Office, Washington, 1 July 1955.

1096. U.S. National Bureau of Standards: Units of weights and measures (U.S. customary and metric); definitions and tables of equivalents. U.S. Dept. of Commerce, NBS Misc Publication no. 233, U.S. Government Printing Office, Washington, 1960.

1097. U.S. National Bureau of Standards: Weights and measures standards of the United States – a brief history. U.S. Dept. of Commerce, Washington, NBS Misc Publication no. 247, 30pp, 1963.

1098 U.S. Senate, Committee on Manufactures: Metric system. Hearings before a subcommittee on S. 2267, 67th Congress, 1st-2nd sessions, 439pp, 1922.

1099 U.S. shift to metric system (developments to watch). Product Engineering, p. 11, 18 May 1959.

1100 USSR use metric system. Magazine of Standards, vol. 33, 232, 1962.

1101 U.S. urges a standard inch. New York Times, p. 8, col. 1, 17 January 1958.

1102 U.S. urges better measuring standards. Aviation Week, vol. 71, 28-29, 31 August 1959.

1103 Valtmire, Wm. G.: Metric inch and dekamelized inch systems. Standards Engineering, vol. 12, 3-6, April-May 1960.

1104 van Rooji, L.; N.V. Philips: Experience with the application of the metric system in an international company. Paper presented at Standards Assn. Section, BSI conference on the change to the metric system in the United Kingdom, and its relation to international standards, British Standards Institution, London, 7pp, 14-15 April 1966.

1105 Varner, W.R.: The fourteen systems of units. Oregon State College Cooperative Association, Corvallis, Ore., 1948.

1106 Veracity of pro-metric statements. American Machinist, vol. 52, 472-473, 26 February 1920.

1107 Verman, L.C.: Metric system in India. ISI Bulletin, vol. 18, 349-376, August 1966.

1108 Verman, Lal C.: Standardization, a pre-adviser to the government of India. A paper prepared for the UN conference in Geneva, Switzerland, February 1963, Indian Standards Institution, Delhi, India, agenda item D. 3. 3, 29 September 1962.

1109 Versagi, F. J.: Bit more on metric conversion. Air Conditioning, Heating & Refrigeration News, vol. 105, 19, 31 May 1965.

1110 Versagi, F. J.: Going metric, another step. Air Conditioning, Heating & Refrigeration News, vol. 111, 22, 28 August 1967.

1111 Versagi, F. J.: Metric system; let us begin. Air Conditioning, Heating & Refrigeration News, vol. 102, 22-23, 22 June 1964.

1112 Versagi, F. J.: Move to metric (twelve conversion tables). Air Conditioning, Heating & Refrigeration News, vol. 104, 31, 18 January 1965.

1113 Viatkine, A. Y.: Standardization in the USSR. Magazine of Standards, vol. 33, 232-234, August 1962.

1114 Vickers, J. S.: SI units in perspective; sentiment vs. commonsense. British Standards Institution, London, BSI News, December 1966.

1115 Vickers inch metric conversion drum. 6pp. Vickers Ltd., England.

1116 Vigoureux, P.: Development of the formulae of electromagnetic in the MKS system. Proceedings of the Institution of Electrical Engineers, vol. 107, Part B, July 1959.

1117 Vivier, Charles: Advantages of metric system. Automobile, vol. 33, 968-969, 25 November 1915.

1118 Vjatkin, A. E.: Standardization as a means of achievement of scientific technical and economic progress and the application of advanced experience in underdeveloped countries (original in Russian, summary in English). UN conference in Geneva, agenda item D. 3. 3, USSR, 4-20, February 1963.

1119 Waddington, P. H. C.: Export to metric countries. Paper presented at Standards Assn. Section, BSI conference on the change to the metric system in the UK, and its relation to international standards, British Standards Institution, London, 3pp, 14-15 April 1966.

1120 Wade, Herbert T.: International bureau of weights and measures. Scientific American, vol. 98, 93-94, 1908.

1121 Wade, Herbert T.: Metric system. Scientific American, vol. 123, 125, 7 August 1920.

1122 Wager, J. A.: Metrics for measurement; man. Gas Age, vol. 133: 33, July 1966; 38-39, August 1966; 37-38, September 1966.

1123 Wakeham, G.: Note on teaching the metric system. Journal Chemical Education, vol. 23, 134, March 1946.

1124 Waltermire, W.G.: Decimalize the inch. Mechanical Engineering, vol. 84, 45-46, July 1962.

1125 Waltermire, W.G.: Discussions of metric inch, and dekamelized inch systems and effect on manufacturing and national economy. Paper presented to Standards Engineers Society, Detroit Chapter meeting, 2 February 1960.

1126 Waltermire, W.G.: Inches, meters, and the facts. Mechanical Engineering, vol. 87, 31-37, March 1965.

1127 Waltermire, W.G.: Metric inch and dekamelized inch. Paper presented at 1960 meeting of Standards Engineers Society (SES), 20 October 1960.

1128 Waltermire, W.G.: Metric inch and dekamelized inch systems. Standards Engineering, vol. 12, 3-5, April-May 1960.

1129 Warren, V.M., et al: Program for changing to metric. Space/ Aeronautics, vol. 31, 301-302, April 1959.

1130 Watkins, T.: Original standard system offers decimalized measurement. Product Engineering, vol. 35, 32-35, 20 July 1964.

1131 We're going to go on the metric system. Changing Times (Kiplinger Magazine), 29-32, December 1965.

1132 Webber, Samuel: The metric system from a mechanical point of view. Cassier's Magazine, vol. 11, 447-449, April 1897.

1133 Weber, N.A.; D.V. Frost: Metric system of measurement (letters). Science, 7 June 1963; 29 November 1963; 14 February 1964.

1134 Weber, N.A.: Metric question. Science, vol. 142, 1125, 29 November 1963.

1135 Weights and measures administration. U.S. Dept. of Commerce, NBS Office of Weights & Measures. NBS Handbook no. 82, 19pp, 22 June 1962.

1136 Weights and measures; Case for gradual transition to metric system. Economist, vol. 160, 1149, 19 May 1951.

1137 Weights and measures (favoring adoption of metric system). Economist, vol. 214, 1171-1172, 13 March 1965.

1138 Weights and measures; metric and otherwise. Economist, vol. 215, 1072, 29 May 1965.

1139 A weighty problem; should U.S. industry go metric? News Front, 34-36, September, 1962.

1140 Weihmiller, H.E.: Notes on conversion to metric system. 80th Congress report, 1st session, Serial H; committee print, Washington, 48pp, 1965.

1141 Weinberg, E.D.: Use of the metric system in microbiology. American Biology Teacher, vol. 22, 340-342, June 1960.

1142 Weiner, B.L.: Decimal system, yes; Metric system, no. Civil Engineering, N.Y., vol. 31, 58-59, June 1961.

1143 Wells, George Y.: In., ft., yd., etc. New York Times, Sect. 4, 48-50, 8 June 1958.

1144 Wells, William C.: Metric standard. Bulletin of the Pan American Union, vol. 44, 22-28, January 1917.

1145 Wertis, J.: Double inventory for distributors. Industrial Distribution, p. 252+, November 1965.

1146 Wertis, J.: Inching up to the meter (conversion to metric system). Management Review, vol. 55, 42-44, January 1966.

1147 Westmeyer and McAda: Awkwards and other units. Science Teacher, vol. 33, 62, March 1966.

1148 What future for metric threads. Engineering (British), vol. 201, 43-46, 7 January 1966.

1149 What is a meter? Mentor, vol. 13, 53, May 1925.

1150 What leaders in the electrical field think of the compulsory metric system. American Machinist, vol. 52, 523-524, 4 March 1920.

1151 What real he men think of the compulsory metric system. American Machinist, vol. 52, 360-364, 12 February 1920; 415-420, 19 February 1920.

1152 Where we stand on standards. American Machinist, vol. 109, 93, 19 July 1965.

1153 Which metric system? Product Engineering, vol. 31, 44-45, 15 August 1960.

1154 Whitaker, R.O.: Philosophy of units and their realization. Measurements & Data, vol. 49, 56, December, 1967.

1155 White, E. N.: Ball and roller bearings, why go metric? Some pros and cons. Paper presented at Standards Assn. Section, BSI Conference on the change to the metric system in the UK, and its relation to international standards, British Standards Institution, London, 7pp, 14-15 April 1966.

1156 Whiteside, John E.: Which metric system. Products Engineering, 29-30, 24 October 1960.

1157 Whitney, Albert W.: Significance of the recent standardization conference, Bulletin of the Pan American Union, vol. 59, 459-461, May 1925.

1158 Whitwell, J. L.: Metric system and engineer. Certificated Engineer, vol. 39, 169-180, May 1966.

1159 Why adopt the metric system? Civil Engineering, vol. 30, 73-75, November 1960.

1160 Why go metric? Consumer Report No. 22, Women's Advisory Committee of the British Standards Institution, London, Winter 1966/1967.

1161 Why has the metric system not been adopted in America? Engineering and Contracting, vol. 54, 176, 25 August 1920.

1162 Why the Westinghouse company does not use the metric system. Machinery, vol. 27, 22, September 1920.

1163 Why U. S. again weighs the merits of metric system. The National Observer, p. 14, 27 September 1965.

1164 Wiener, Leo: Origin of the metric system. Nation, vol. 84, 103-104, 31 January 1907.

1165 Wiggin, B. C.: Anti-metric (letter). Chemical & Engineering News, p. 12, 12 November 1962.

1166 Wiggin, B. C.: Magnificent inch; mainstay of our remarkable English system of measure. Assembly Engineering, vol. 8, 48-52, May 1965.

1167 Wiggin, B. C.: The magnificent inch - round 2. Assembly Engineering, vol. 8, 14-16, August 1965.

1168 Wiggin, B. C.: The metric debate. Product Engineering, vol. 33, 81-83, 14 May 1962.

1169 Wiggin, B. C.: That durable inch. Naval Engineers Journal, vol. 78, 497-500, June 1966.

1170 Wiggin, B. C.: Triple U, a universal units system. Research & Development, vol. 17, 29-32, February 1966.

1171 Wiley Jr., Earl T.: DOD armed forces supply support center letter, re use of metric threads, to R. P. Trowbridge, 21 November 1961.

1172 Will Britain go metric? Magazine of Standards, vol. 35, 78, March 1964.

1173 Will NATO battle tank open door to metric system? Steel, vol. 154, 23-24, 1 June 1964.

1174 Wilson, G. M.: Metric promises and short comings. Education, vol. 69, 641-647, June 1949.

1175 Wilson, Harold: International equipment maker uses system of country involved. Metalworking News, 28 September 1964.

1176 Wolfle, D.: Adoption of the metric system. Science, vol. 149, 139, 9 July 1965.

1177 Wolfle, D.: Metric vs. English units. Science, vol. 131, 195, 22 January 1960.

1178 Woodall, Erin Marie: The metric system, legislative proposals and agreements pro and con. Economics Div., Legislative Reference Service, Library of Congress, Washington, 6pp, 20 December 1960.

1179 Woodward, Walter, W. (Asst. for Reliability Engineering, Deputy Chief of Staff, R&D, AFSC, USAF): Statement before Subcommittee No. 1, Committee on Science & Astronautics, U. S. House of Representatives, Washington.

1180 Woolf, H.: Quantification; a history of the meaning of measurement in the natural and social sciences. Bobbs-Merrill Company, Indianapolis, Ind., 1961.

1181 Working of the system in France. Cassier's Magazine, vol. 31, 359-360, February 1907.

1182 World adopts new standard of length. Magazine of Standards, vol. 32, 12-14, January 1961.

1183 Worldwide use of measuring systems, Ford and the metric system, report no. 2. Ford Motor Company, Dearborn, Mich., 29pp, 1967.

1184 Would metric system move be worth all the trouble? Los Angeles Times, Part III, 3 September 1965.

1185 Wray: You and the metric system. Arithmetic Teacher, vol. 11, 576-580, December 1964.

1186 Wu, C. C.: Unification of weights and measures in China. Ministry of Industries, Bureau of Standard Weights & Measures, China, 1934.

1187 Yard and pound. Chemistry & Industry (British), p. 75, 17 January 1959.

1188 Yard or the meter, which? Engineering Journal, vol. 44, 43-52, June 1961.

1189 Yorke, G. C.: Field study in weights and measures. Education Administration & Support, vol. 29, 248-251, April 1943.

1190 Yorke, G. C.: Weights and measures in South America. Education, vol. 71, 514-527, April 1951.

1191 Yorke, G. C.: Why don't we teach the metric system? Journal of Education, vol. 65, 480-484, April 1945.

1192 Yoshimura, Toshio: Japan would cheer U. S. swing to metrics. Metalworking News, 28 September 1964.

1193 Young, Dudley S., et al: The yard or inch meter - which? Panel discussion, annual meeting of the EIC, Winnipeg, Manitoba, Canada, 1960.

1194 Zagar, Frank: So we switch to the decimal inch. Magazine of Standards, 79-80, March 1967.

1195 Zaforoni: Developing concepts of measurement. The Instructor, vol. 71, 32-33+, April 1962.

1196 Zimmerman, O. T.; I. Lavine: Conversion factors and tables. Industrial Research Service, Inc., Dover, N. H., 3rd edition, 1961.

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METRIC UNITS FOR COMMON USE

The Metric System of weights and measures includes units for measuring physical quantities which every one of us use every day. The three main units; meter, liter, and gram, can be changed to more convenient sized units for specific purposes by means of several well known prefixes. Milli means 1/1000, centi means 1/100, deci means 1/10, and kilo means 1000. One merely learns the main units and the value of the most commonly used prefixes. The symbols for metric units are the same for single and plural amounts and are not followed by a period. Rates are usually shown by use of the slash as in m/s.

Quantity	Unit	Symbol	Relationship of Units
Length	millimeter	mm	1 mm = 0.001 m
	centimeter	cm	1 cm = 10 mm
	decimeter	dm	1 dm = 10 cm
	meter	m	1 m = 100 cm
	kilometer	km	1 km = 1000 m
Area	square centimeter	cm^2	1 cm^2 = 100 mm^2
	square decimeter	dm^2	1 dm^2 = 100 cm^2
	square meter	m^2	1 m^2 = 100 dm^2
	are	a	1 a = 100 m^2
	hectare	ha	1 ha = 100 a
	square kilometer	km^2	1 km^2 = 100 ha
Volume	cubic centimeter	cm^3	1 cm^3 = 0.001 l
	milliliter	ml	1 ml = 0.001 l
	cubic decimeter	dm^3	1 dm^3 = 1000 ml
	liter	l	1 l = 1000 ml
	cubic meter	m^3	1 m^3 = 1000 l
Mass*	milligram	mg	1 mg = 0.001 g
	gram	g	1 g = 1000 mg
	kilogram	kg	1 kg = 1000 g
	metric ton	t	1 t = 1000 kg

The underlined units in the above table are basic or derived units of the International System of Units (SI) which is described on page 9.

The Metric System simply and logically coordinates the measurements of length, area, volume, and mass into one decimalized system. United States currency, with its unexcelled convenience, was the first large scale national use of a decimal system. The ratio between the units of the series — dollars, dimes, cents, and mills — is ten. Additions and other numerical operations are simple. Except by adjustment of the decimal point, the Metric System requires no conversion from unit to unit as in the U.S. Customary System, as for example between inches and feet or ounces and pounds.

*Mass is the quantity of matter; whereas weight is a force, Earth's attraction for a given mass. Generally, the term mass is meant when we use weight.

In the Metric System there is one series of units for length, one for area, one for volume or capacity, and one for mass.

LENGTH — The common metric units of length are the millimeter (mm) for small dimensions, the centimeter (cm) for daily practical use, the meter (m) for expressing dimensions of larger objects and short distances and the kilometer (km) for longer distances. The centimeter is about four-tenths of an inch. The meter is about forty inches and the kilometer about six-tenths of a mile. When drawing to metric scale, engineering and product dimensions are in millimeters, while architectural drawings can be in millimeters or centimeters. On land surveys the unit is the meter, whereas for maps the kilometer is used.

AREA — Small areas are usually measured in square centimeters (cm^2). In building and construction the square meter (m^2) is used and is about 20 per cent larger than a square yard. The hectare (ha) is used for land surveys and is equal to 2.47 acres.

VOLUME — For volume the most convenient unit is the cubic decimeter (dm^3) which is commonly referred to as the liter (l)*. The liter is slightly larger than the U.S. liquid quart but smaller than the U.S. dry quart and the British Imperial quart. The preferred unit for dispensing drugs and for scientific work is the cubic centimeter (cm^3) or milliliter (ml) as it is also called. For measuring amounts of concrete and excavations the cubic meter (m^3) is used and is about 30 per cent larger than the cubic yard.

MASS — In pharmaceutical and scientific work the gram (g) is the most convenient unit. There are slightly less than 30 grams in one avoirdupois ounce. For most other uses the kilogram (kg) is convenient and equals 2.2 pounds. The metric ton (t), 1000 kg, is used for farm commodities, minerals, and large shipments. It is convenient that a liter of pure water at standard temperature and pressure contains a mass of almost one kilogram (discrepancy less than one part in 10 000). This relationship makes it easy to determine the mass of any known volume of water, or of any other liquid if its specific gravity is known.

TEMPERATURE — All countries using the Metric System of weights and measures also use the Celsius (°C) scale (formerly called centigrade) for ordinary measurement of temperature. On the Celsius scale pure water at standard atmospheric pressure freezes at 0° and boils at 100°. Normal human body temperature is 37°, while a comfortable room temperature is about 23°. The preferred temperature scale for engineering and physics is the kelvin (K) which has the same units as the Celsius and where the freezing point of pure water is 273.15 K.

*In October 1964 the 12th General Conference on Weights and Measures changed the definition of the liter to equal a cubic decimeter. Formerly the liter was the volume of one kilogram of pure water at 4°C, which made it slightly larger than a cubic decimeter.

(The above data is an excerpt from the 8th edition (1968) of "Metric Units of Measure," published by the Metric Association.)

INTERNATIONAL SYSTEM OF UNITS (SI)

Quantity	Unit	Symbol	
	Basic Units		
Length	meter	m	
Mass	kilogram	kg	
Time	second	s	
Electric current	ampere	A	
Temperature	kelvin	K	
Luminous intensity	candela	cd	
	Supplementary units		
Plane angle	radian	rad	
Solid angle	steradian	sr	
	Derived units		
Area	square meter	m^2	
Volume	cubic meter	m^3	
Frequency	hertz	Hz	(s^{-1})
Density	kilogram per cubic meter	kg/m^3	
Velocity	meter per second	m/s	
Angular velocity	radian per second	rad/s	
Acceleration	meter per second squared	m/s^2	
Angular acceleration	radian per sec. squared	rad/s^2	
Force	newton	N	($kg \cdot m/s^2$)
Pressure	newton per square meter	N/m^2	
Kinematic viscosity	square meter per second	m^2/s	
Dynamic viscosity	newton-second per square meter	$N \cdot s/m^2$	
Work, energy, quantity of heat	joule	J	($N \cdot m$)
Power	watt	W	(J/s)
Electric charge	coulomb	C	($A \cdot s$)
Voltage, potential difference, electro-motive force	volt	V	(W/A)
Electric field strength	volt per meter	V/m	
Electric resistance	ohm	Ω	(V/A)
Electric capacitance	farad	F	($A \cdot s/V$)
Magnetic flux	weber	Wb	($V \cdot s$)
Inductance	henry	H	($V \cdot s/A$)
Magnetic flux density	tesla	T	(Wb/m^2)
Magnetic field strength	ampere per meter	A/m	
Magnetomotive force	ampere	A	
Flux of light	lumen	lm	($cd \cdot sr$)
Luminance	candela per square meter	cd/m^2	
Illumination	lux	lx	(lm/m^2)

Metric decimal prefixes

Multiplication Factors	Prefix	Symbol
1 000 000 000 000 = 10^{12}	tera	T
1 000 000 000 = 10^{9}	giga	G
1 000 000 = 10^{6}	mega	M
1 000 = 10^{3}	kilo	k
100 = 10^{2}	hecto	h
10 = 10^{1}	deka	da
1 =	(Units)	
0,1 = 10^{-1}	deci	d
0,01 = 10^{-2}	centi	c
0,001 = 10^{-3}	milli	m
0,000 001 = 10^{-6}	micro	μ
0,000 000 001 = 10^{-9}	nano	n
0,000 000 000 001 = 10^{-12}	pico	p
0,000 000 000 000 001 = 10^{-15}	femto	f
0,000 000 000 000 000 001 = 10^{-18}	atto	a

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